

DEVELOPMENTALLY APPROPRIATE PRACTICE IN THE PRIMARY
GRADES:
CLASSROOM PRACTICES AND THE ESPOUSED BELIEFS
OF PRIMARY TEACHERS, PRINCIPALS, AND TEACHER EDUCATORS

by

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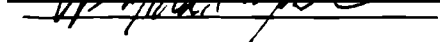
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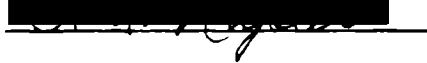
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Developmentally Appropriate Practice in the Primary
Grades: Classroom Practices and Espoused Beliefs of
Primary Teachers, Principals, and Teacher Educators
Thesis directed by Professor Michael Martin

ABSTRACT

This is a descriptive study designed to examine the classroom practices of first and second grade teachers and the espoused beliefs of primary teachers, principals, and teacher educators concerning developmentally appropriate curriculum and instructional methods in the primary grades.

Data were gathered from 142 first and second grade teachers and 32 principals in public schools in the Denver metropolitan area and 45 teacher education faculty members in teacher education certification programs in Colorado.

Data on beliefs regarding developmentally appropriate practice in the primary grades and the actual classroom practices of primary teachers were collected by means of two questionnaires. These questionnaires were based upon guidelines for developmentally appropriate practice for the primary grades established by the

National Association for the Education of Young Children (Developmentally Appropriate Practice in Early Childhood Programs Serving Children from Birth through Age 8). In order to validate the accuracy of the above instruments, data on teachers' practices were collected by observing and interviewing a sub-sample of 20 primary teachers using the Checklist for Rating Developmentally Appropriate Practice in Early Childhood Classroom. This checklist consisted of items reflective of items on the questionnaires.

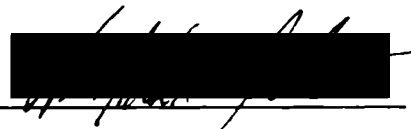
Data were analyzed with analyses of variance and dependent t-tests. Results (significant at or below the .05 level) indicated that: (a) while educators studied in this sample espoused beliefs which were appropriate and consistent with NAEYC guidelines overall, teacher educators and principals espoused more developmentally appropriate beliefs than primary teachers, (b) while primary teachers reported implementing and were observed to implement instructional practices reflective of a developmental-interactive perspective overall, the frequency of some developmentally inappropriate activities suggests the influence of the behaviorist perspective which dominates much of the curricula of public schools, (c) when there was an apparent lack of congruence between teacher beliefs and practice,

teachers' beliefs tended to be more developmentally appropriate than their classroom activities, and (d) teachers with early childhood certification offered more developmentally appropriate activities than teachers with elementary certification only.

Implications for primary teacher education, the role of the elementary principal, and district and state level policy are presented.

This abstract accurately represents the content of the candidate's thesis. I recommend its publication.

Signed



Michael Martin

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CHAPTER 1

THE PROBLEM

Introduction

Early childhood education is commonly associated with the years from birth through kindergarten. However, the early childhood period includes the next few years through the ages of 7 or 8. Research on social and physical development and study of the cognitive growth of the child indicate that the primary years are more analogous to early childhood than to the later elementary school period (Piaget & Inhelder, 1969; Piaget, 1973; Margolin, 1976). The special characteristics shared by children in the primary grades often go unrecognized in the planning of curriculum and instructional methods appropriate to this age group.

According to Piaget (Piaget, 1973; Piaget & Inhelder, 1969), children's cognitive processes develop in an orderly sequence of stages. The preoperational stage spans approximately ages 2 to 7, thus including most children in kindergarten, first, and second grades. During this stage, the foundations for logical thought are developed. According to Piaget, logical operations are constructed through children's autonomous activities that provide opportunities to discover relationships and

ideas. Cognitive growth takes place when children construct their own knowledge by interacting with people and materials in their environment.

During the primary years, other intellectual growth occurs which opens up expanded social possibilities for the child. Through social interaction and experience, a gradually increased mobility of thought enables the child to take the view of another person and replaces egocentrism with cooperative endeavors (Hunt, 1961). Thus, some important social transformations accompany the intellectual changes at about the age of 7 or 8.

In addition, children in the primary years share many physical characteristics which are relevant to their school experience.

They experience growth spurts, which may cause instability, awkwardness, and an increased need for movement. Small muscles and bones are not completely formed or developed; fine-motor tasks still present a challenge for many children. Most children of this age are naturally farsighted, and activities requiring close work such as printing are very tiring. Children's hearing is not fully developed, and phonics-related activities requiring close attention to small details may be inappropriate. (Gareau & Kennedy, 1991, pp. 49-50)

The National Association for the Education of Young Children (NAEYC), the nation's largest organization of early childhood educators, defines early childhood as the years from birth through 8. One of the most comprehensive documents (Bredekamp, 1987) addressing the

issue of developmentally appropriate practice in early childhood programs is the position statement published by NAEYC. This document represents the expertise of key authorities in the field and the experience of hundreds of early childhood professionals. NAEYC believes that one indicator of the quality of primary education is the extent to which the curriculum and instructional methods are developmentally appropriate for children 6 through 8 years of age based on the most current knowledge of teaching and learning as derived from theory, research, and practice (Bredekamp, 1987).

Despite the growing body of research on what young children need for optimal development and how they learn, primary teachers may have misconceptions about development and appropriate instruction in these grades.

Background of the Problem

Early education today is influenced by two dominant educational philosophical and psychological perspectives: the behavioristic-learning theory perspective based on the work of Skinner, and the developmental perspective, incorporating the work of Piaget and Dewey (Seefeldt, 1976). The behaviorist perspective currently dominates the curricula of the public schools as demonstrated by academic, teacher-directed large-group instruction,

careful sequencing of skills, systematic use of reinforcement, use of workbooks, and much drill and practice. According to many early experts in early childhood education, this perspective, along with a recent emphasis on "back to basics" and improved standardized test scores, results in many elementary schools narrowing the curriculum and adopting instructional approaches that are incompatible with current knowledge about how young children learn and develop (Bredekamp, 1987, p. 62). With an emphasis on rote learning of academic skills rather than active, experiential learning in a meaningful context, Bennett (1986) contends that many children are being taught academic skills but are not learning to apply those skills in context and are not developing more complex thinking skills such as the ability to communicate complex ideas and to analyze and solve complex problems.

Experts in early childhood education advocate a developmental-interactive perspective as appropriate for children 6 through 8 years of age, reflected in a child-centered integrated curriculum designed to develop skills in all developmental areas through active involvement with other children, adults, and materials in the environment. Teachers guide children's learning experiences by extending children's ideas, responding to

their questions, engaging them in conversation, making suggestions, and encouraging and challenging their thinking (Bredekamp, 1987; NAEYC, 1988).

The developmental-interactive perspective incorporates the cognitive developmental theory of Piaget but is also compatible with components of Vygotsky's sociocultural theory. Vygotsky (1978) emphasizes the influence of the socio-cultural context on development and learning. Vygotsky views thinking as activity, dependent upon speech, and developed and maintained through interpersonal experience. He contends that cognitive development has its origins in interaction among people in a culture before the psychological process--representing ideas, events, attitudes, and strategies--is internalized within children.

Curriculum can be derived from several sources: the child, the content, and the society (Tyler, 1949). According to NAEYC, the curriculum in early childhood programs is typically a balance of child-centered and content-centered curriculum. "Good preschools present rich content in a curriculum that is almost entirely child-centered. As children progress into the primary grades, the emphasis on content gradually expands as determined by the school, the local community, and the society" (Bredekamp, 1987, p. 62). The challenge for

teachers is to plan for rich, meaningful content in a program of developmentally appropriate teaching practices which take advantage of the child's natural abilities, interests, and enthusiasm for learning. This requires application of knowledge about childrens' cognitive, language, physical, social-emotional and moral development to practice in the primary grades. According to Peck, McCaig, and Sapp (1988), if the kindergarten program is developmentally appropriate and the first grade based on a didactic approach, children will be in for a shock and any developmental gains from kindergarten may be lost shortly after children are confronted with an inappropriate first grade curriculum.

Are educators of young children in the primary grades implementing practices reflecting a teacher-structured behavioristic perspective or a child-centered developmental-interactive perspective as advocated by prominent early childhood educators? Do primary teachers consider themselves "elementary " teachers rather than "early childhood" teachers? What do primary teachers consider to be developmentally appropriate curriculum and instructional methods?

Statement of the Problem

What are the classroom practices of first and second grade teachers and the espoused beliefs of primary teachers, principals, and teacher educators concerning developmentally appropriate curriculum and instructional methods in the primary grades?

Research Questions

1. To what extent are the espoused beliefs of primary teachers, principals, and teacher educators consistent with the NAEYC guidelines for developmentally appropriate practice for 6 to 8 year olds?
2. Is there a difference in the beliefs of primary teachers, principals, and teacher educators regarding appropriate primary curriculum and instructional practices?
3. What is the relationship between developmentally appropriate and inappropriate beliefs?
4. To what extent are primary teachers implementing practices which are consistent with the NAEYC guidelines for developmentally appropriate instructional practices for 6 to 8 year olds?
5. What is the relationship between appropriate classroom instructional practice and inappropriate instructional practice?

6. What is the congruence between the beliefs of primary teachers and their teaching behavior in the classroom?

7. Is there a difference in the level of developmentally appropriate beliefs and practices between those primary teachers with certification in early childhood education and those primary teachers with elementary education certification only?

Implications of the Study

This study is important to primary teachers interested in improving their teaching. The literature review examines research on developmentally appropriate practice in the primary years. The results highlight the importance of examining one's beliefs explicitly and determining the congruency between one's beliefs and classroom practices.

An understanding of the beliefs and classroom behaviors of practicing primary teachers with respect to appropriate curriculum is of interest to the administrators of teacher education programs in evaluating the degree to which teacher education for the primary grades includes the development of children ages 6 to 8 and the instructional methods and curriculum appropriate for these ages as opposed to older elementary

school children. Traditionally, the aim of teacher training institutions has been to provide students with a sound understanding of theory in order that their graduates pursue appropriate educational goals. However, teacher candidates may not be able to derive from theory a coherent framework to guide practice, because researchers and theorists provide insufficient directives in the translation of theory to everyday practice. Kaplan-Sanoff (1980) claims that the goal of teacher education should be to produce graduates who are able to articulate and defend their own beliefs about the teaching-learning process. The responsibility of teacher educators thus becomes one of ensuring that teachers not only have a sound understanding of principles of child development and learning theory, but they are able to translate their beliefs into educational goals and teaching practices consistent with the development and learning abilities of primary grade children. Early childhood teacher certification separate from elementary certification may be necessary for primary teachers to ensure that they understand the unique developmental characteristics of young children and the implications for curriculum and instruction.

Understanding the relationship between an individual teacher's beliefs about appropriate curriculum

practices and that individual's ability to implement practices in the classroom is of interest to elementary school principals charged with hiring primary teachers, providing supervision and staff development. Principals may need to give primary teachers additional support and in-service work to learn more about recent research and theory on how young children learn. More importantly, this study highlights the necessity of addressing not just teacher behavior, but the beliefs and principles which give rise to behavior. Therefore, one of the tasks of principals may be to assist the teacher in acknowledging and evaluating his or her beliefs.

School districts can use information from this study in their hiring and evaluating of elementary school principals to determine whether principals are aware of the differing philosophical approaches to early childhood education and their ability to promote developmentally appropriate curriculum and instructional methods for the primary grades.

Summary and Outline of Research Design

This was a descriptive study examining the classroom practices of first and second grade teachers and the espoused beliefs of primary teachers, principals, and teacher educators concerning developmentally appropriate

curriculum and instructional methods in the primary grades. The study also examined differences in level of developmentally appropriate beliefs and practices between teachers certified in early childhood education and those certified in elementary education.

The purpose of this study was to:

1. Identify the degree to which the beliefs of primary teachers, elementary school principals, and early childhood teacher educators are congruent with the NAEYC guidelines for appropriate/inappropriate curriculum and instructional practices for 6 to 8 year olds.

2. Identify the degree to which primary teachers' practices are congruent with the NAEYC guidelines for appropriate/ inappropriate instructional practices for 6 to 8 year olds.

3. Compare the congruence between the beliefs of primary teachers and their teaching behavior in the classroom.

4. Compare the level of developmentally appropriate practice between those primary teachers with a certification in early childhood education and those primary teachers with elementary certification.

The work of Argyris and Schon on "theories-in-use" is presented to justify focus on the importance of beliefs as a determinant of teacher practice and the

importance of congruency between beliefs and practice. Argyris and Schon (1974) suggest that theories of action determine all deliberate behavior. Such theories of action depend on a set of stated or unstated assumptions. According to their view, when someone is asked how he or she would behave under certain circumstances, the answer usually given is their espoused theory of action for the situation--the theory of action to which one gives allegiance and communicates to others. However, the theory that actually governs one's actions is one's theory-in-use, which may or may not be compatible with one's espoused theory (p. 7). Congruence exists when one's espoused theory matches the theory-in-use -- one's behavior fits one's espoused theory of action.

Data on beliefs regarding developmentally appropriate practice in the primary grades and the actual classroom practices of primary teachers were collected by using The Teacher Questionnaire, an instrument that consists of a Teacher Beliefs Scale (TBS) and an Instructional Activities Scale (IAS) (see Appendixes A and B). These self-report instruments were developed based on the section on primary grades in Developmentally appropriate Practice in Early Childhood Programs Serving Children from Birth through Age 8 (Bredekamp, 1987) and represent areas of primary instruction as specified in

the NAEYC guidelines: curriculum goals, teaching strategies, integrated curriculum, guidance of social-emotional development, motivation, parent-teacher relations, evaluation, and transitions.

Each Teacher Belief Scale item is a statement (e.g. It is important for children to learn through interaction with other children) that the respondent rates on a 5 point Likert scale from not important at all to extremely important. Instructional Activity Scale items describe an activity (e.g. children selecting centers). The respondent rates the frequency of availability of each activity in his/her classroom along a 5 point scale from almost never (less than monthly) to very often (daily).

A brief cover sheet accompanied the TBS to provide demographic information regarding education and teaching experience (see Appendix C). A version of the Teacher Belief Scale was administered to first- and second-grade teachers, elementary school principals, and early childhood/elementary teacher education faculty members. The Instructional Activities Scale was administered to primary teachers only.

In order to validate the accuracy of The Teacher Questionnaire, data on teachers' practices were collected by observing a sub-sample of twenty primary teachers using the Checklist for Rating Developmentally

Appropriate Practice in Early Childhood Classrooms (see Appendix D). This checklist consists of items reflective of items on the teacher questionnaires. These primary teachers were observed on two occasions (for a 2-3 hour period each) within a 2-week period.

Observers were college students with experience in early childhood education. Student observers read and discussed the complete NAEYC Guidelines with the researcher before doing observations. Before school visits, observers conducted pilot observations in a college laboratory preschool to practice and assure interobserver reliability. Student observers were blind to the results of the teacher questionnaires.

Definition of Terms

For the purposes of this study, the following terms were defined as follows:

1. Beliefs--individual constructions of reality constructed from personal experience (Sigel, 1985, p. 349).
2. Early childhood-- the years in a child's life from birth to age 8 (Bredekamp, 1987, p. 62).
3. Primary teachers--first and second grade teachers.

4. Developmentally appropriate curriculum--a curriculum which is planned to be appropriate for the age span of the children within the group and is implemented with attention to the different needs, interests, and developmental levels of those individual children (Bredekamp, 1987, pp. 3-9, 67-68).

Such a curriculum:

- is designed to develop children's knowledge and skills in all areas of development (physical, emotional, social, and cognitive) and to help children learn how to learn--to establish a foundation for lifelong learning.
- is based on teachers' observations and recordings of each child's special interests and developmental progress
- is designed to develop children's self-esteem, sense of competence, and positive feelings toward learning
- emphasizes learning as an interactive process where teachers prepare the environment for children to learn through active exploration and interaction with adults, other children, and materials
- is integrated so that children's learning in all traditional subject areas occurs primarily through projects and learning centers that teachers plan and that reflect children's interests and suggestions

- provides opportunities for children to choose from a variety of activities, materials, and equipment and provides time to explore through active involvement
- provides for multicultural and nonsexist experiences, materials, and equipment
- provides a balance of rest and active movement for children throughout the program day
- provides outdoor experiences for children of all ages.

5. Developmentally appropriate instructional methods (or teaching strategies) include the following characteristics (Bredekamp, 1987, pp. 69-70):

- the curriculum is integrated so that learning occurs primarily through projects, learning centers, and playful activities that reflect current interests of children
- teachers guide children's projects and enrich the learning experience by extending children's ideas, responding to their questions, engaging them in conversation, and challenging their thinking
- individual children or small groups are expected to work and play cooperatively or alone in learning centers and on projects that they usually select themselves or are guided to by the teacher

--learning materials and activities are concrete, real, and relevant to children's lives.

6. Developmentally inappropriate curriculum is narrowly focused on the intellectual domain with intellectual development defined as acquisition of discrete, technical academic skills, without recognition that all areas of children's development are interrelated (Bredekamp, 1987, p. 67).

In such a curriculum:

- children are evaluated against a standardized group norm
- all children are expected to achieve the same easily measured academic skills by the same predetermined time schedule (chronological age and grade level expectations).

7. Developmentally inappropriate instructional methods (or teaching strategies) include the following characteristics (Bredekamp, 1987, pp. 67-69):

- curriculum is divided into separate subjects
- primary emphasis is given to reading and secondary emphasis to math; other subjects such as social studies, science, and health are covered if time permits
- art, music, and physical education are taught only once a week by specialists

- instructional strategies focus on teacher-directed groups, whole-group lecture, paper-and-pencil exercises or worksheets
- children work individually at desks; children are rarely permitted to help each other
- interest areas are limited to children who have finished seatwork early or children are assigned to a learning center to complete a prescribed sequence of teacher-directed activities
- available materials are limited primarily to books, workbooks, and pencils.

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

The literature review is organized into four sections:

- 1) a theoretical model for interpreting the research on teacher beliefs and behavior
- 2) research which defines beliefs and the importance of beliefs in teaching
- 3) the definition and rationale for developmentally appropriate practice in early childhood education through the primary years
- 4) educational research about the relationship between beliefs and practices.

A Model for Teachers' Theories of Action

Argyris and Schon (1974) suggest that theories of action determine all deliberate behavior. Such theories of action depend on a set of stated or unstated assumptions and beliefs. According to their view, when someone is asked how he or she would behave under certain circumstances, the answer one usually gives is their espoused theory of action for the situation--the theory of action to which one gives allegiance and communicates

to others. However, the theory that actually governs one's actions is one's theory-in-use, which may or may not be compatible with one's espoused theory (p. 7). Congruence exists when one's espoused theory matches the theory-in-use--one's behavior fits one's espoused theory of action.

As explained by Argyris and Schon, theories are vehicles for explanation, prediction, or control.

An explanatory theory explains events by setting forth propositions from which these events may be inferred, a predictive theory sets forth propositions from which inferences about future events may be made, and a theory of control describes the conditions under which events of a certain kind may be made to occur. (p. 5)

As a theory, theories of action share general properties that all theories share--generality, relevance, consistency, completeness, testability, centrality, and simplicity. Theories of action depend on a set of stated or unstated assumptions and beliefs (Argyris & Schon, 1974).

Argyris and Schon suggest that theories of professional practice are best understood as special cases of the theories of action that determine all deliberate behavior. A theory of practice consists of "a set of interrelated theories of action that specify for the situations of the practice the actions that will,

under relevant assumptions, yield intended consequences" (p. 6).

According to Argyris and Schon, theories-in-use include assumptions about self, others, the situation, and the connections among action, consequence, and situation (p. 7). Theories-in-use cannot be determined simply by asking; they must be constructed from observations of behavior.

Theories-in-use are means for getting what we want. They specify strategies for every kind of intended consequence. Theories-in-use are also a means for maintaining certain kinds of constancy, for keeping certain governing variables of interest to us within a range acceptable to us.

Our theories-in-use specify which variables we are interested in (as opposed to the constraints of our environment about which we can do nothing) and thereby set boundaries to action. Within these boundaries, theories-in-use provide the programs by which the variables may be managed. (Argyris & Schon, 1974, p. 15)

Thus, theories-in-use create the teachers' behavioral world as they act according to the requirements of the governing variables of their theories-in-use.

Teachers work at maintaining the constancy of their theories-in-use. Theories-in-use are the means of maintaining specific constancies, but they also come to be valued in their own right for the constancy of the

world-picture they provide. "The inherent variability of the behavioral world gives us more information than we can handle, so we value a stable world-picture, being predictable, and being able to predict" (Argyris & Schon, 1974, pp. 16-17). Teachers work at maintaining their theories-in-use, even when they prove ineffective.

According to Argyris and Schon, whether theories-in-use tend to "create a behavioral world that constrains or frees the individual" depends on answers to the following questions: Are the theories-in-use internally consistent? Are they congruent? Are they testable? Are they effective? Do we value the worlds they create (1974, p. 20).

Internal consistency involves the absence of self-contradiction. Internal inconsistency results when one variable (such as teacher control) falls out of its acceptable range if the other variable (such as child choice) is brought into the acceptable range.

Congruence means that one's espoused theory matches one's theory-in-use--their behavior fits their espoused theory of action and inner feelings are expressed in actions. Congruence allows for

an integration of one's internal (what one who is aware of my feelings and beliefs would perceive) and external (what an outsider who is aware only of my behavior would perceive) state. Lack of congruence between espoused theory and theory-in-use may precipitate search for a modification of either

theory since we tend to value both espoused theory (image of self) and congruence (integration of doing and believing). (Argyris & Schon, 1974, p. 23)

A theory-in-use is effective when action according to the theory tends to achieve its governing variables. Testing consists of evaluating whether the action yields its predicted results. If it does, the theory-in-use has been confirmed (Argyris & Schon, 1974, pp. 24-25).

Argyris and Schon's work on theories-in-use has direct application to the training and supervision of teachers. According to their view, "understanding how we diagnose and construct our experience, take action, and monitor our behavior while simultaneously achieving our goals is crucial to understanding and enhancing effectiveness" (p. xi). Argyris and Schon see a distinct advantage to explicitly stating one's theories-in-use. Substituting the word "teacher" for the word "agent" makes the following quote directly applicable to teachers:

If the teacher is performing ineffectively and does not know why or if others are aware of his ineffectiveness and he is not, explicitly stating his theory-in-use allows conscious criticism. The teacher's efforts to defend his tacit theory-in-use may prevent his learning to behave differently; he may not be willing to behave differently until he has examined his theory-in-use explicitly and compared it with alternatives. He may be unable to test his theory-in-use until he has made it explicit. (pp. 14-15)

Argyris and Schon contend that we value the constancy of our theories-in-use and our behavioral

worlds; thus theories-in-use tend to be self-maintaining. They suggest people adopt strategies to avoid perceiving that data do not fit and the behavioral reality is increasingly divergent from one's theory of it.

However, occasionally people are faced with dilemmas which require change in their theory-in-use. As defined by Argyris and Schon, dilemmas consist of a conflict between some element of the prevailing theory-in-use and some criterion applicable to the theory.

--Dilemmas of incongruity arise out of the progressively developing incongruity between espoused theory and theory-in-use. "In order for such conflicts to become dilemmas, the elements of espoused theory must be central to the protagonist's self-image, and events must emphasize the conflict between espoused theory and theory-in-use in ways that overcome normal attempts to avoid noticing the conflict" (p. 30).

--Dilemmas of inconsistency arise when the governing variables of theory-in-use become increasingly incompatible.

--Dilemmas of effectiveness arise when governing variables in theory-in-use/behavioral-world interaction become unachievable.

--Dilemmas of value arise when the behavioral world created by the theory-in-use becomes intolerable (pp. 30-31).

Using Agyris and Schon's ideas as applied to teachers, one could expect that teachers develop a "repertoire of devices" by which to protect their theories-in-use from dilemmas:

1. Teachers may try to compartmentalize--separating their espoused theory and theory-in-use. "One goes on speaking in the language of one theory, acting in the language of another, and maintaining the illusion of congruence through systematic self-deception" (p. 33)

2. Teachers may become selectively inattentive to the data that point to dilemmas.

3. The teacher introduces change, but only into his or her espoused theory--leaving their theory-in-use unchanged.

4. The teacher introduces marginal change into his or her theory-in-use, leaving the core untouched.

Incongruity becomes intolerable when teachers find that they cannot realize the central governing variables of the espoused theory on which their self-esteem depends. Thus the basic dilemma is one of effectiveness and constancy. The teacher "strives to be effective and to keep constant his theory-in-use and the behavioral

world he has created. When, finally, he cannot do both in spite of his full repertoire of defenses, he may change the governing variables of his theory-in-use" (Argyris & Schon, 1974, p. 38).

According to Argyris and Schon, the goals of the process of constructing/modifying theories-in-use must be to

produce data that help the individual to learn; help individuals gain insight into the conditions under which their defenses as well as their theories-in-use inhibit and facilitate their growth and the growth of others; provide information from which individuals can design programs for self-improvement, gain help from others, and evaluate their progress; and help individuals learn how to discover their own theories-in-use and generate new ones--that is, learn to generate directly observable data, infer theories-in-use, alter theories-in-use, and test new theories of action. (p. 39)

Definition of Beliefs and the Importance of Beliefs in Teaching

Definition of Beliefs

Sigel defined beliefs as individual constructions of reality constructed from personal experience (1985, p. 349). The source of beliefs is personal experience and the individual's perception of that experience, not provable knowledge. Sigel asserts that beliefs statements are not synonymous to fact statements (knowledge) in that

beliefs are knowledge in the sense that the individual knows that what he (or she) espouses is true or probably true, and evidence may or may not be deemed necessary; or if evidence is used, it forms a basis for the belief but is not the belief itself. (p. 348)

Thus while knowledge is derived from provable evidence, beliefs can be based on non-verifiable emotions and speculation. According to Sigel, an individual does not seek provable fact statements to substantiate his or her position but may instead adopt the belief merely because it has been useful in his or her personal experience (1985, p. 349).

Sigel asserts that beliefs may be either conscious or non-conscious. Individuals may or may not be aware of their beliefs and therefore may or may not be able to articulate them.

According to Sigel (1985), the degree to which beliefs are related to behavior is modified by several conditions: (a) intentionality--the willingness and/or ability to act in harmony with one's beliefs of how, (b) attitudes regarding the action as well as the object of one's actions, and (c) the value of the action and consequent interaction (p. 356).

In addition, Sigel maintains that beliefs do not occur in isolation but must be considered within the surrounding context. Belief-behavior interaction is influenced by factors such as education, contacts with

significant others, cultural traditions, and past individual experience (p. 357).

Nespor (1987) presents a conceptualization of beliefs grounded in current research in cognitive psychology which supports Sigel's definition of beliefs. Nespor contends that several features serve to distinguish 'beliefs' from 'knowledge':

1. Existential presumption--Belief systems frequently contain propositions or assumptions about the existence or nonexistence of entities--such as the entities thought to be embodied by the students. The "conversion of transitory, ambiguous, or abstract characteristics into stable, well-defined and concrete entities is important because such entities tend to be seen as immutable--as beyond the teacher's control and influence" (p. 318).

2. Alternativity--Beliefs often include representations of 'alternative worlds' or 'alternative realities'--conceptualizations of ideal situations differing significantly from present realities. "In this respect, beliefs serve as means of defining goals and tasks, whereas knowledge systems come into play where goals and the paths to their attainment are well-defined" (p. 319).

3. Affective and evaluative aspects--According to Nespor, belief systems rely much more heavily on affective and evaluative components than knowledge systems. She contends that affect and evaluation can be "important regulators of the amount of energy teachers will put into activities" (p. 320).

4. Episodic structure--Information in knowledge systems is stored primarily in semantic networks, while belief systems are composed mainly of 'episodically'-stored material derived from personal experience or from cultural or institutional sources. Beliefs "often derive their subjective power, authority, and legitimacy from particular episodes or events" (p. 320).

5. Non-consensuality--Belief systems consist of "propositions, concepts, arguments that are recognized -- by those who hold them or by outsiders--as being in dispute or as in principle disputable" (p. 320). Much of the non-consensuality of beliefs derives from a lack of agreement over how they are to be evaluated. By contrast, part of the consensus characterizing knowledge systems is a consensus about the ways in which knowledge can be evaluated or judged (p. 320).

Importance of Beliefs in Teaching

Several researchers have discussed the manner in which the beliefs of teachers influence their decisions and behavior in the classroom (Bauch, 1984; Janesick, 1979; Mayer, 1985; Munby, 1983; Schickedanz, York, Steward, & White, 1983; Spodek, 1987, 1988). Beliefs have been described as providing a screen through which teachers view the world and establish the basis for teachers' action (Harvey, 1970; Nespor, 1985; Spodek & Rucinski, 1984).

According to Spodek (1987), "teachers actions and classroom decisions are driven by their perceptions and beliefs. They create conceptions of their professional world based upon their perceptions of reality and their beliefs of what is true" (p. 197). Spodek (1988) discussed the role of teachers' "implicit theories" in guiding instruction. Implicit theories are the ideas about child development and instruction that teachers develop from their personal experience based on their practical knowledge. According to Spodek, they differ from the explicit theories of the profession which are taught in education and child development courses. Teachers' implicit theories provide a way to interpret events and a means of predicting the consequences of

teachers' actions, which Spodek noted is consistent with Argyris and Schon's (1974) concept of "theories- in-use."

Nespor (1985) maintains that teachers' beliefs about teaching play a crucial role in the way they formulate goals and define the tasks of teaching. Nespor conducted the Teacher Beliefs Study, an intensive, two-year program of research on the structures and functions of teachers' belief systems. Eight teachers in three school districts were videotaped to construct verbatim records of classroom actions and were interviewed using a variety of techniques, including stimulated recall, and "repertory grid" to generate data on the teachers' beliefs.

Teachers were found to act according to reasons that made sense to them in terms of what they considered the goals of teaching to be. Analyzing the data lead Nespor to the conclusion that teachers have conceptual systems, even though they may be implicit and unsystematized, which are used for making sense of, evaluating, and justifying classroom activities and interactions.

Using extensive participant observation and interviews, Janesick (1979) observed one sixth-grade teacher's classroom and discovered how his perception of his class determined his decision making and leadership style. This teacher perceived his class as a cohesive, interacting group. He believed that it was important to

maintain a sense of unity within his classroom, by organizing daily activities to promote the values of respect and cooperation and by demonstrating the behaviors he wished his students to model. Janesick noted that "outside influences, such as district-mandated management-by-objectives system in reading and math, intervention by the principal or other staff members, and directives from parents had little or no effect on the classroom curriculum" (p. 28). She concluded that the teacher's classroom perspective was the source of the curriculum of the classroom.

The Definition and Rationale for Developmentally
Appropriate Practice in Early Childhood Education
Through the Primary Years

Definition of Developmentally Appropriate

The National Association for the Education of Young Children (NAEYC) has been at the forefront in delineating developmentally practice for young children. NAEYC's original position statement on developmentally appropriate practices (1986b) focused most specifically on programs for 4- and 5- year olds, because of concerns about the formally academic content of many prekindergarten and kindergarten curricula. A recently expanded position statement (Bredekamp, 1987) presents components of appropriate and inappropriate practice for

each of five age groups: infants, toddlers, 3-year-olds, 4-and 5-year-olds, and primary grade children. This document represents the expertise of many of the foremost authorities in the field and the experience of hundreds of early childhood educators.

In this NAEYC position statement, the concept of developmentally appropriate practice is defined based upon the knowledge of the typical development of children within a certain age span (age appropriateness) as well as the uniqueness of the individual (individual appropriateness).

As indicated by the references cited in the 1987 guidelines (including Biber, Elkind, Erikson, Kamii, Katz, Piaget, and Schweinhart), the content of these guidelines is strongly influenced by those developmental and educational theories and research findings which emphasize direct experience, concrete materials, child-initiated activity, responsive adults and social interaction. This is contrasted with inappropriate practice which ignores the concrete, hands-on approach to learning and emphasizes teacher-directed large-group instruction focusing on the direct teaching of specific, discrete skills through the use of paper and pencil activities and much drill and practice.

In the NAEYC guidelines, the components of a primary grade educational program (such as curriculum goals, teaching strategies, integrated curriculum, guidance of social-emotional development, motivation, parent-teacher relations, evaluation) are described. Statements of appropriate practice are paired with a corresponding inappropriate practice. For example, the following pair is found within the category of "integrated curriculum" in programs for the primary grades:

APPROPRIATE Practice: The goals of the language and literacy program are for children to expand their ability to communicate orally and through reading and writing, and to enjoy these activities. Technical skills or subskills are taught as needed to accomplish the larger goals, not as the goal itself.

INNAPPROPRIATE Practice: The goal of the reading program is for each child to pass the standardized tests throughout the year at or near grade level. Reading is taught as the acquisition of skills and subskills. (Bredekamp, 1987, p.70)

Primary Grades as a Part of Early Childhood

The period of early childhood between ages 2 and 7 is what Piaget called the preoperational stage of human development (Piaget, 1970; Piaget & Inhelder, 1969). Piaget viewed preoperational children as dominated by perceptions, focusing on only one aspect of an event or object at a time, rather than understanding underlying concepts and relations. They are rarely able to think hypothetically or deal with abstractions. Piaget found

that children make cognitive discoveries by interacting with objects and learning from trial and error. Based on the work of Piaget, Schweinhart and Weikart (1988) contend that the effectiveness of early childhood education depends not only on the content that is offered but also on the opportunities to explore this content actively and think about the experience. "Later, the concrete-operational child is intellectually disposed toward social rules, regulations, and systematic learning, but such matters are both uncharacteristic and unnecessary during the preoperational period" (p. 216).

According to Katz (1990), contemporary research confirms that young children learn most effectively when they are engaged in interaction rather than in merely receptive or passive activities. She asserts that young children should be interacting with adults, materials, and their surroundings in ways which help them make sense of their own experiences and environment. Interaction that arises in the course of such activities provides a context for social and cognitive learning. Katz (1990) identifies four kinds of learning in early childhood--knowledge, skills, feelings and dispositions. She defines dispositions as enduring "habits of mind," characteristic ways of responding to experience. Katz argues that one goal of early childhood education is to

support the young child's dispositions toward curiosity, humor, creativity, persistence, willingness to engage in conversations, and explorations of the environment. Such explorations not only form the foundations of physical, logical, and mathematical knowledge (Piaget, 1970), but they lead to the development of the dispositions of a responsible, creative learner. According to Schweinhart and Weikart (1988), teacher-directed instruction on the basic academic skills during the preoperational period makes learning-style demands that are appropriate for children several years older. Early childhood education provides for the development of skills that form the basis of later development, but the "basic skills" of the preoperational period are not those of the concrete-operational period. Like Katz, they emphasize the dispositions with which the child approaches learning and activity. In their view, a high-quality early education "guides the child into a course of development supported by knowledge, skills, and dispositions that guide learning and social relationships into adulthood" (p. 218).

The National Association of State Boards of Education (NASBE) represents state boards of education, which are elected or appointed bodies of lay citizens responsible for setting standards, approving programs,

and developing policies for public schools. In July 1986, NASBE began a program of technical assistance to help state policymakers plan new early childhood initiatives. The NASBE Task Force addressed a variety of concerns regarding recent trends in teaching, curriculum, and assessment practices in the early grades including increased use of standardized tests for younger children, prevalence of worksheets and workbooks, tracking and retention of children, increased focus on narrowly defined basic skills, and a segmented and fragmented approach to the teaching of skills and content. Early childhood experts testifying before the Task Force criticized these trends as inconsistent with knowledge of how children learn best in their early years of schooling. The NASBE Task Force report, Right from the Start, seeks to broaden the definition of early childhood issues to promote improvements in kindergarten and the early grades. Its recommendations reflect child development principles: learning occurs best when there is a focus on the whole child; learning for children and adults is interactive; young children learn from concrete work and play; young children are profoundly influenced by their families and the surrounding community (Schultz & Lombardi, 1989). According to Schultz & Lombardi, the NASBE report advances the thinking of public school

leaders about the importance of viewing early childhood as a continuum from birth through age 8 and is significant as an added endorsement for the major child development principles advocated by NAEYC.

Developmentally Appropriate Instructional Methods

According to Katz (1990), the younger the children are, the greater the variety of teaching methods and the more informal the learning environment should be. Informal learning environments encourage spontaneous play and cooperative effort. She asserts that preschool and kindergarten experiences require an approach in which children interact in small groups as they work together on projects which help them make sense of their own experience.

As described by Connell, in the early childhood period

it is primarily not what you teach, but how you teach that makes for success or failure. More than fifty years of solid child development research tells us strongly that children under a mental age of six years--which many seven-year-olds still are too--are usually still in the learn-by-doing stage. We must question whether or not a kindergarten or first grade (or even a second grade) without a great many lively play activities and interesting projects, and a great deal of quiet conversation among children, is functioning appropriately. (1987, p. 32)

According to Katz and Chard (1989), the project approach is a particularly promising strategy for

fostering children's interactions as suggested by research. A project is a group undertaking, usually around a particular theme or topic. A project involves a variety of kinds of work over a period of several days or weeks. A theme of the project may be introduced by the teacher or children or evolve from discussions they have together. Webster describes characteristics of well-designed projects (1990). Such projects (a) promote children's attempts to construct their own understanding and interpretation; (b) include features within the scope of the project that necessitate the use of basic academic skills; (c) encourage children's independent, creative thinking; and (d) are managed in ways that allow for diverse levels of involvement and provide diverse cognitive challenges so that no child "fails" (Webster, 1990).

Another method of teaching in the primary grades that allows for developmental theory and educational practice to be integrated is the use of learning centers (Gareau & Kennedy, 1991; York, 1977). A learning center is a clearly defined area of the classroom containing materials selected by the teacher to facilitate the teaching-learning process in which a small group of children, generally from one to six in number, may work independently (York, 1977). Learning centers are

designed to appeal to children's interests and to elicit their active involvement during learning. Learning centers structure the learning environment by the arrangement of space, equipment, and materials through which children are free to move, choose, and busy themselves (Myers & Maurer, 1987). Rather than instructing the entire group of children, the teacher is freed to interact with small groups or individual children. According to Myers and Maurer (1987), the learning centers approach is consistent with developmentally appropriate practice by allowing the teacher to consider both the age appropriateness and the individual appropriateness of learning experience.

Projects and learning centers provide problem solving situations for young children. Goffin and Tull (1985) maintain that problem solving is distinctly different from academic learning. They view academic skills as representing external knowledge that must be taught. Problem solving opportunities encourage children to create new mental relationships by interacting with the environment. Meaningful problems stimulate children's mental activity as they relate new understandings to previous one. This is consistent with the application of Piaget's ideas to early childhood education. Cognitive development, from a Piagetian

perspective, involves children's interacting with their environment and the creation of increasingly more complex relationships that result in a more complete framework for understanding reality; it is not the accumulation of isolated pieces of information (Goffin & Tull, 1985). Problem solving activities enable children to actively investigate the cause and effects of their actions on the people and objects in their environment; encourage children to elaborate and refine their knowledge; promote initiative, cooperation, independence, curiosity, and a sense of competence as children see the impact of their actions in a challenging and responsive environment (Goffin & Tull, 1985).

According to Goffin and Tull, early childhood educators should recognize the possibilities for problem solving in typical classroom activities such as creative dramatics and puppetry, cooking, blockbuilding, carpentry, and art. Such everyday activities can be expanded into problem-solving possibilities by encouraging children to plan, predict possible outcomes, make decisions, and observe the results of their actions. Goffin and Tull also encourage the use of open-ended materials such as blocks, water, sand, wood, and art materials because they respond immediately to children's actions and encourage problem solving by allowing

children to test ideas (p. 30). These authors also point out that the peer interactions inherent in such classroom activities result in opportunities for interpersonal problem solving--encouraging children to consider others' points of view, developing understanding about social interactions, and assuming more responsibility in their relationships with peers.

Developmentally Appropriate Assessment in Early Childhood

The NAEYC Guidelines for Developmentally Appropriate Practice contain the following statement regarding assessment.

Assessment of individual children's development and learning is essential for planning and implementing developmentally appropriate programs, but should be used with caution to prevent discrimination against individuals and to ensure accuracy. Accurate testing can only be achieved with reliable, valid instruments and such instruments developed for use with young children are rare. In the absence of valid instruments, testing is not valuable. Therefore, assessment of young children should rely heavily on the results of observations of their development and descriptive data. (Bredekamp, 1987, pp. 12-13)

It is further recommended that decisions that have a major impact on children such as enrollment, retention, or assignment to remedial or special classes should be based on multiple sources of information and should never be based on a single test score. Often initial assessment takes the form of "readiness testing" with young children or "achievement testing" with older children. The

results of these tests can be used to exclude children from a program, track them by ability, or otherwise label them. However, no available school readiness test is accurate enough to screen children for placement into programs without a 50% error rate, as reported by Shepard & Smith (1986). Therefore, the results obtained on a single administration of a test must be confirmed through periodic assessment and corroborated by other sources of information to be considered reliable. Recommended sources of assessment information include combinations of: (a) systematic observations by teachers and other professionals; (b) samples of children's work such as drawings, paintings, dictated stories, writing samples, and projects; and (c) observations and anecdotes related by parents and other family members (Bredekamp, 1987; Meisels, 1989; The National Association for the Education of Young Children and the National Association of Early Childhood Specialists in State Departments of Education, NAECS/SDE, 1991).

Further NAEYC and NAECS/SDE recommendations which are most relevant to a discussion of curriculum and instructional practices in the primary grades include (1991, p. 32):

1. Curriculum and assessment are integrated throughout the program; assessment is congruent with and

relevant to the goals, objectives, and content of the program.

2. Assessment results in benefits to the child such as needed adjustments in the curriculum or more individualized instruction and improvements in the program.

3. Children's development and learning in all the domains--physical, social, emotional, and cognitive--are informally and routinely assessed by teachers observing children's activities and interactions and listening to them as they talk.

4. Assessment relies on demonstrated performance during real, not contrived activities--for example real reading and writing activities rather than only skills testing.

5. Assessment utilizes an array of tools and a variety of processes including but not limited to collections of representative work by children (artwork, stories they write, tape recordings of their reading), records of systematic observations by teachers, records of conversations and interviews with child, teachers' summaries of children's progress.

Early Childhood Teacher Certification

The Association of Teacher Educators (ATE) and the National Association for the Education of Young Children (NAEYC) have jointly developed guidelines for certification standards for teachers in programs serving children from birth through 8 years of age (1991). The Early Childhood Teacher Certification Guidelines recommend the establishment of specialized early childhood teacher certification standards which are "distinctive from, and independent of, existing elementary and secondary certifications" (ATE and NAEYC, 1991, p. 17). These organizations contend that the absence of consistent standards for specialized early childhood certification has led to the lack of adequate preparation programs in early childhood education at the baccalaureate level in many states.

The ATE and NAEYC argue that early childhood teachers must be adequately informed about the "unique developmental characteristics of young children and the implications for curriculum and instruction" (1991, p. 17). They recommend that this specialized knowledge must be reflected in standards for early childhood teacher certification established by state boards of education and other certifying agencies to ensure that the certified early childhood teacher will demonstrate

professional knowledge, attitudes, dispositions, values, and attitudes regarding growth, development, and learning; family and community relations; curriculum development, content, and implementation; health, safety, and nutrition; field experiences and professional internship; and professionalism. (p. 19)

Pressure for Inappropriate Practice and Its Effects

Despite the accumulation of theory, research, and teaching experience in favor of instructing children at their level of intellectual, social, and physical maturity, there is not broad acceptance of developmentally appropriate education for young children because developmentally appropriate curriculum and teaching practices contradict much of the pedagogy in today's schools (Warger, 1988). The paradigm that dominates contemporary American education is behavioral. At the core of the behavioral paradigm are the assumptions that (a) only observable behaviors that can be measured are of value and (b) the basic principles of learning are the laws of classical and operant conditioning. According to this view, each behavior is taught through a stimulus-response pattern. Through an analysis of prerequisite and component skills needed to perform the task, a skill sequence is planned. The teacher identifies the child's entry level skills, then

presents instruction along predetermined lines based upon the skill sequence.

The task of the teacher is the transmission of knowledge through direct instruction. According to Schweinhart & Weikart (1988), teacher-directed instruction produces a standard product by relying on the standard practices of lecture, teacher-centered discussions, and paperwork. The teacher provides the stimulus to the child (spoken and written information) and checks to make sure the information has been received through questioning, paperwork, and standardized tests. Willert and Kamii assert that this kind of early direct instruction is based on the erroneous assumption that "children are like empty glasses who learn by having bits of knowledge poured into them and that the sooner we start to fill the glasses, the sooner this process will be completed" (1985, p. 3).

Shepard and Smith (1988) contend that the academic demands in the primary grades are higher today than twenty years ago and continue to escalate. They suggest that the downward shift of what were next-grade expectations into the earliest grades results from demands for acceleration from middle-class parents and demand from the public that schools be accountable for preparation in academic skills. "Promotional gates" at

the third or sixth grade become translated downward into fixed requirements for the end of first and second grade. The increased demand for accountability also results in the increased use of standardized achievement tests, which results in a narrow curricular focus. Kamii (1985) reports that primary grade teachers feel compelled to give phonics lessons because they are expected to produce acceptable test scores. Although many teachers believe that first graders cannot possibly understand missing addends and place value, they feel required to teach this content because it is on the achievement test.

NAEYC asserts that "the trend toward early academics is antithetical to what we know about how young children learn" (p. 4, 1986a). Highly formalized activities that occur too early deprive children of time to learn from play, substitute inappropriate symbolic learning for manipulative learning, detach reading from normal language development, stifle natural exploration, and increases stress (Elkind, 1987; Kamii, 1985; NAEYC, 1986a).

Willert and Kamii (1985) suggest that authoritarian teachers who tell children what to do from one moment to the next thwart children's initiative and curiosity. Katz (1990) states that the risk of early instruction in beginning reading skills is that the amount of drill and

practice required for success at an early age will undermine children's disposition to be readers.

Shepard and Smith (1988) noted that fixed, higher standards cause many more children to fail. They report that policies such as raising the entrance age for kindergarten, readiness screening, and kindergarten retention--which are intended to solve the problem of inappropriate academic demand by removing younger or unready children--have not been effective in reducing the failure rate in kindergarten and first grade.

The Relationship Between Beliefs and Practice Curriculum Innovation and Curriculum Design

An extensive study of the understandings of teachers under conditions of a change to open and less formal approaches to instruction was conducted by Bussis, Chittenden, and Amarel (1976). They interviewed 60 kindergarten, first, and second grade teachers, then analyzed and categorized their responses into categories representing curriculum, understanding of children's perceptions of the working environment, and perceptions of support from advisers.

These researchers made a distinction between "the surface content of curriculum and a deeper level of

organizing content...with 'surface' referring to the manifest activities and materials in the classroom and the 'deeper level' referring to the purposes and priorities a teacher holds for children's learning" (Bussis et al., p. 4).

Bussis et al. found that teachers differed significantly in the number of learning priorities held, in their awareness of the existence of these priorities, and in their perceptions of the connection between priorities and the surface content of the curriculum.

Another discovery that the researchers made was that a substantial percentage of the teachers held philosophies inconsistent with the open-classroom approach and dealt with the conflict in different manners. One group of teachers behaved in their traditional manner and showed no evidence of changing their surface curriculum in the classroom. Another group of teachers followed the open-classroom program while experiencing a great deal of anxiety and frustration. They encouraged group interaction in their classroom but experienced a fear of management problems.

In general, the belief-behavior relationship was stronger for those teachers whose construct systems were clearly formulated and articulated. The researcher concluded that teachers need to have a philosophical

commitment to an innovative program in order for it to work and an ability to see the connection between their priorities for children's learning and the surface curriculum. Bussis et al. also concluded that aides and parents were more influential in shaping teacher behavior than were the principal or school policies (1976).

How teachers' beliefs and principles interact with the adoption of an externally imposed novel curricula is the focus of a study by Olson (1981). He investigated the dilemma that teachers face when the beliefs embedded in an innovation are perceived by them to be fundamentally at odds with their perceptions of their roles in the classroom. Olson's study investigates the thoughts and feelings of eight science teachers who attempted to implement the English Schools Council Integrated Science Project (SCISP). The researchers speculated that teacher implementation of SCISP would cause difficulty for the teachers because the curriculum, based on the inquiry approach, emphasized the process of instruction (as opposed to content) and free-ranging discussion periods. This was contrary to the conception of teaching held by the teachers using the curriculum, who were very traditional.

To probe for the features of teachers' beliefs of interest to his study, Olson used the Repertory Grid

Technique of Kelly (1955) and found that "an important common and underlying construct in the practical language of teachers is that of classroom influence" (Olson, 1981, p. 264). This construct conflicted with the new science curriculum that advocated a low influence teaching style, with the teacher as a facilitator of open discussion encouraging students to discover knowledge on their own.

Olson found that teachers did not have a "language" for explaining the innovations in this program. Consequently, they translated the program into their own frame of reference. Teachers resolved the dilemma of dealing with a curriculum which called for low classroom influence in a number of ways. One teacher used open-ended discussion questions as an opportunity to deliver information through direct instruction. Another teacher used project questions as end-of-chapter, homework-type questions. Discussion periods were viewed by one teacher as a time for students to freely talk without any teacher guidance, thus downplaying the importance of the discussion. For another, discussion lessons were viewed as "pure waffle" (Olson, 1981).

In summary, Olson found that teaching behavior in the classroom is linked to belief systems about the role of the teacher and appropriate curriculum; teachers' beliefs and principles interact with curricular

innovations resulting in translations which radically alter the curriculum as practiced.

The conclusion drawn from the Bussis et al. and the Olson studies is that when teachers are confronted with a teaching method containing beliefs inconsistent with their own, they tend to return to a practice that is more consistent with their own belief system, thus supporting the contention that beliefs create practice.

In a qualitative study to determine the nature of teachers' beliefs and principles regarding curriculum and teaching, Munby (1983) found that teachers were extremely diverse in their beliefs about teaching, including teachers instructing in the same curricular areas. Munby concluded that this diversity of beliefs accounted for the fact that the same curriculum was implemented differently across classrooms. Munby suggests that curriculum designers must consider teachers' beliefs systems in that teachers' beliefs and principles interact with the adoption of curricula.

Munby's conclusions are consistent with Roberts's (1980) conception of a "theory-practice interface" wherein a teacher's beliefs and principles, together with his perception of the professional context in which he finds himself, interact with the text of curriculum

materials and the embedded views, conceptualizations, and intents of the curriculum developer.

Preschool Teachers

According to Spodek (1987), teachers actions and classroom decisions are driven by their perceptions and beliefs. They create conceptions of their professional world based upon their perceptions of reality and their beliefs of what is true. "These understandings, and the thought processes that lead to them, become the basis of the teacher's actions. To understand the nature of teaching one must understand teachers' processes of thinking about teaching, and the belief systems that drive these processes" (p. 197).

Spodek (1987) conducted a study designed to examine preschool teachers' thoughts related to decision-making in the classroom. Observations of four preschool teachers were recorded in a notebook. Following classroom visits, observers reviewed recordings and identified the decisions made by the teacher. Descriptions of teacher decisions and their context were presented to teachers in an interview session later that day. Teachers were asked about reasons for their decisions. Interviews were audiotaped and later transcribed. The statements regarding their thoughts

were dichotomized into "scientific concepts"--statements of what was thought to be true and "value beliefs"--statements of what was thought to be right.

It was found that these preschool teachers generated a greater variety of beliefs and concepts than had primary teachers studied earlier, with fewer of them held in common. Most of the teachers' concerns were with classroom management rather than with achieving the goals of the program. "The fact that so many of the thoughts underlying the teachers' classroom decisions were related to values and were concerned with the process of maintaining classroom activities seems to raise issues about the foundation of early childhood educational practice" (Spodek, 1987, p. 206). Spodek contends that many early childhood educators view the field as a practical application of the scientific field of child development and assume that providing increased knowledge of child development research and theory will improve the work of the classroom teachers (Caldwell, 1984; Katz, 1984). However, the results of this study indicate that relatively few of the theories used by the teachers were grounded in reliable knowledge of child development. Spodek suggests that the teachers' decisions seem to be based on a form of personal practical knowledge rather than the technical knowledge of child development and

learning theory. He further concluded that the teachers' thinking processes determined the actions that were taken in the classroom. Teacher belief statements provided for an interpretation of events and a way of predicting the consequence of teachers' action. According to Spodek, this is consistent with the concept of "theories-in-use" as described by Argyris and Schon (1974). "Such theories determine the internal consistency of the actions of practitioners" (Spodek, 1987, p. 199).

The purpose of a study by Verma and Peters (1975) was the development of appropriate and theoretically relevant measures for the naturalistic observation of teacher/child interaction patterns within day care settings and for assessing the beliefs or attitudes held by the observed teachers. The theories of Piaget and Skinner were used as the foundation of the rating instrument developed to measure teachers' beliefs about child development and learning. The resulting Teacher Belief Rating Scale consisted of items representing Operant and Piagetian beliefs. A Teacher Practices Observations Form was developed by formulating observable behavioral categories, each of which correspond to the items on the belief scale. When administered to teachers in programs that were designed to follow either Piagetian or operant principles, the teachers' beliefs and

practices were consistent. However, when the measures were used with 38 day care teachers from a variety of programs, the researchers found that the day care teachers agreed significantly more with Piagetian beliefs than with operant beliefs, but behave in ways more consistent with operant theory than with Piagetian theory. The results indicated that only two of the 38 teachers had practices that were consistent with their beliefs.

Gonzalez-Vargas (1984) examined the relationship among three variables: "teacher beliefs regarding child development theories, teacher structure as observed by experts, and teacher structure as perceived by the teachers themselves" (p.2). She defined teacher structure as "the manner in which teachers organize the educational setting regarding the day-to-day curriculum, the physical environment and the way they relate to children" (p. 6).

Gonzalez-Vargas interviewed and observed 34 early childhood teachers. It was predicted that there would be a positive relationship between teacher beliefs and teacher behavior as demonstrated by an agreement between teacher beliefs regarding child development and teacher structure. Results indicated that neither teacher beliefs about child development nor teacher beliefs about

appropriate structure were found to be significantly correlated to teacher structure as observed by experts. Teacher beliefs about child development and teachers' perceptions of their behavior in the classroom were found to be related.

This relationship indicated that teachers who showed strong beliefs in favor of behavioristic theory perceived themselves as high structure teachers, teachers who showed preference for maturationist theory perceived themselves as low structure teachers and teachers who expressed beliefs in favor of developmental theory perceived themselves as structured to a degree, but less than that perceived by the teachers in the behaviorist group and more than that perceived by the teachers in the maturationist group. (p. 125)

Based upon guidelines outlined in Developmentally Appropriate Practice in Early Childhood Programs Serving Children from Birth Through Age 8 (NAEYC, 1986a), Hoot, Bartkowiak, and Goupil (1989) developed the "Educators' Beliefs Regarding Preschool Programming" to assess knowledge of appropriate practice among educators. Survey items were created to assess beliefs in the sub-areas described in the NAEYC document. These included beliefs concerning: curriculum goals, teaching strategies, guidance of socioemotional development, language/literacy development, cognitive development, physical development, aesthetic development, motivation, parent-teacher relations, assessment of children, program entry and staffing.

Surveys were returned by 401 elementary and special education administrators, pre-kindergarten, kindergarten, primary, intermediate, and special education teachers from a large Northeastern state. Respondents, in general, appeared to have a reasonable knowledge of developmentally appropriate practices and no significant differences were found between groups in the areas of cognitive development, aesthetic development, parent-teacher relations and assessment of young children. Significant difference among professional groups were found in the following areas: curriculum goals, teaching strategies, guidance of socioemotional development, language/ literacy development, physical development, motivation, assessment of children, program entry and staffing. A one-way analysis of variance determined these significant difference between subject groups:

1. Elementary administrators, special education administrators, and pre-kindergarten teachers scored significantly higher than elementary teachers. (High scores indicate more developmentally appropriate.)

2. Special education administrators, pre-kindergarten and special education teachers scored significantly higher than intermediate teachers.

3. Elementary administrators, special education administrators, pre-kindergarten teachers and special

education teachers scored significantly higher than primary grade teachers.

4. Special education administrators and pre-kindergarten teachers scored significantly higher than kindergarten teachers.

Therefore, with the exception of the pre-kindergarten teachers, those most likely to fill rapidly developing public school pre-kindergarten positions (primary and intermediate teachers) scored significantly lower than elementary and special education administrators and special education teachers. Hoot et al. refers to data indicating that teachers with more formal background in child development and early childhood education are more likely to carry out appropriate practices whereas teachers whose previous teaching experience was with older children seem to have "a particularly difficult time 'unlearning' inappropriate methods" (Mitchell & Modigliani, 1989, p. 58). According to Hoot et al., this information becomes increasingly problematic in union states where seniority (rather than competence with a particular age group) is used as teacher selection criteria for early childhood programs.

The purpose of a study by Wing (1989) was to examine the relationship between teachers' beliefs, instructional decisions, and preschool children's conception of reading

and writing. Wing summarized two predominant beliefs about reading that teachers often possess. The first, a "mastery of specific skills/text-based" orientation, reflects the belief that "reading ability develops to the extent that students master specific reading skills...and to the extent that these skills are taught by another person" and that "reading consists largely of sounding out words on a page" (Leu & Kinzer, 1987, pp. 29-39). The second, a "holistic/reader-based" orientation, reflects the belief that "reading ability develops as students engage in meaningful, functional, and holistic experiences with print and that much of their learning takes place in a largely inductive fashion." Also reflected is the belief that "readers use background knowledge and the evolving meaning of text to help them make guesses and form expectations for upcoming words" (Leu & Kinzer, 1987, pp. 41-51).

Two nursery schools were selected for the Wing study. One school was found to have a "mastery of specific skills/text based" orientation (Montessori school), and the other was found to have a "holistic/reader-based orientation (constructivist school). Three sets of data were collected at each school: director interviews; observations of literacy

materials, methods, and experiences; and child interviews.

The directors' beliefs were found to be highly consistent with the philosophies of their programs. Their beliefs were reflected as a mastery of specific skills/text based orientation (Montessori) or a holistic/reader-based orientation (constructivist school). These orientations were also reflected by the materials and practices in the two programs. From the child interviews, results indicated that these preschool children's conceptions of reading and writing reflected the instructional beliefs and decisions of the nursery school program in which they were enrolled. The children in each school gave at least twice as many responses that reflected their school's orientation toward reading and writing. Wing concluded that the practices of the preschool teacher may influence whether children view reading as "sounding out words" or as "looking at books" and whether they view writing as "copying letters" or as "writing a story."

Kindergarten Teachers

The conflict between knowledge about how children grow and learn and how they are actually being taught is evidenced by the conclusions from a study by Hatch and

Freeman (1988a). They interviewed a kindergarten teacher, a principal, and a central office administrator responsible for kindergarten programs from each of 12 school districts in Ohio. Analysis of interviews led to the identification of two broad generalizations:

- 1) Kindergarten programs are increasingly academic and skill oriented; and 2) individuals responsible for implementing these programs may not believe that their kindergarten best serves the needs of young children, with the result that these individuals experience philosophy-reality conflicts. (p. 151)

Interview questions designed to reveal informants' philosophies of early childhood education were analyzed and classified into three categories according to their perceptions about child development: maturationism, behaviorism, and interactionism.

Maturationism, espoused by Gesell and others, stresses the role of genetically controlled biological change in behavior and learning. In contrast, behaviorism, associated with Skinner, emphasizes the importance of environmental factors. Interactionism, also known as cognitive-developmental theory, is based on the work of Piaget and views development as the dynamic interaction of the individual with his or her environment (Hatch & Freeman, 1988a, p. 159).

Hatch and Freeman described the majority of kindergartens in this study as skill-based, highly structured, academically focused and based on a direct

instruction model, suggesting a behaviorist orientation to learning and development. No teacher reported using a "child-initiated" approach. Use of learning centers was limited to "a location in the room where teachers provided planned activities that children were assigned to complete" (1988a, p. 157).

Hatch and Freeman reported that of the 36 individuals interviewed, 27.8% of their subjects communicated beliefs that were classified as maturationist, 27.8% communicated interactionist beliefs, and 44.4% communicated behavioristic beliefs. The researchers described as "surprising" the finding that 55.6% of the subjects held maturationist or interactionist beliefs while working in or supervising programs that were behavioristic in practice. This discrepancy between their own philosophies of education and the realities of classroom practice was labelled a "philosophy-reality conflict." This conflict was found to be more prevalent among teachers than principals or central office supervisors. Over 66% of the teachers interviewed expressed maturationist or interactionist beliefs; thus they were in conflict between their espoused beliefs about what is appropriate to facilitate learning in young children and their implementation of behaviorist classroom practices; 50% of the principals

and supervisors held maturationist or interactionist beliefs.

In a study by the Oregon Department of Education (Hitz, 1986; Hitz & Wright, 1988), researchers also found educators implementing more academically oriented practices in the kindergarten while espousing more developmentally oriented beliefs. Questionnaires were sent to all elementary principals with kindergartens in their schools, all kindergarten teachers, and a random sample of 325 first-grade teachers. One portion of the survey was designed to determine teacher and educator views regarding kindergarten curriculum and practices. Respondents were asked to express level of agreement or disagreement with twelve statements reflecting one of two views about kindergarten practices: a formal, structured view in which workbooks, teacher-directed activities, and formal testing are emphasized, and a developmental view that emphasizes the teaching of basic skills and concepts through direct experience with objects and people.

Principals, kindergarten teachers, and first grade teachers responded more favorably to the statements reflecting a developmental philosophy than to statements reflecting a formal academic approach to teaching kindergarten. They supported the use of dramatic play, open-ended materials, and hands-on activities. They

disagreed with the heavy use of workbook and other seat work activity in the kindergarten program. However, when asked about the degree and direction of change in recent kindergarten practices, "the most striking response was the agreement--reported by 61% of the principals, 64% of the kindergarten teachers, and 72% of the first-grade teachers--that emphasis on academic skill development has increased" (Hitz & Wright, 1988, p. 29).

Kagan and Smith (1988) examined the relationship between kindergarten teachers' cognitive styles and their tendency to implement a child-centered vs. a teacher-structured approach to kindergarten. Fifty-one kindergarten teachers completed self-report instruments assessing cognitive style, teaching ideology, classroom behavior, and occupational stress. In addition, outside raters recorded two kinds of teacher behavior: "verbal interactions, and 'mapping' data indicating the positions of teacher and students within the classroom" (p. 26).

Two inventories were used to measure teachers' cognitive styles: Myers-Briggs Type Indicator (Myers & McCaulley, 1985) and the Inquiry Mode Questionnaire (Harrison & Bramson, 1977). Teaching attitudes towards structuring a kindergarten class were assessed with the Teacher Belief Rating Scale (Verma & Peters, 1975), a self-report instrument designed to evaluate the beliefs

of early childhood teachers in terms of two developmental theories: Piagetian vs. operant. Evaluations of teachers' classroom behaviors were made using the Teacher Structure Checklist (Webster, 1972).

To analyze the data collected with these instruments, bivariate relationships among all variables were evaluated with Pearson correlations. Scores on the Teacher Belief Rating Scale, the checklist measuring teachers' perceptions of their own classroom behavior, and their actual behavior as evaluated by observers using the Teacher Structure Checklist were all highly interrelated. Teachers who endorsed child-centered attitudes used less teacher-structure and more child focus in their classes.

Endorsement of child-centered beliefs was also related to a number of observational measures -- use of relatively little criticism, the tendency to work and to communicate with individual children or with small groups rather than with the entire class. Thus a confluence of self-report, third-party and observational data appeared to define the child-centered kindergarten. (Webster, 1972, p. 30)

With respect to scores on the Inquiry Mode Questionnaire and measures of teacher attitude or behavior, high scores on the Idealist scale were consistently associated with behavior and attitudes characteristic of a child-centered approach to kindergarten; scores on the Pragmatist and Realist scales were positively related to behavior characteristic of a

teacher-centered approach. Kagan and Smith inferred from this data that the "use of more teacher structure in class was regarded by teachers as a more immediately pragmatic method of classroom management" (p. 33).

Due to high positive correlation among teachers' beliefs, self-reported classroom behaviors and outside raters' reports of classroom the researchers suggested two generalizations:

First, kindergarten teachers did appear to operationalize their beliefs about the best way to teach young children. Secondly, teachers were quite accurate in their own perceptions of the classroom environment they created. (Webster, 1972, p.33)

Using the NAEYC Position Statement of Developmentally Appropriate Practice in Programs for 4- and 5-Year Olds (NAEYC, 1986b), Charlesworth, Hart, Burts, and Hernandez developed a questionnaire to obtain information regarding teachers' beliefs and practices. The questionnaire contained two subscales: the Teacher Beliefs Scale (TBS) containing 30 items regarding teachers' beliefs and the Instructional Activities Scale containing 31 items designed to inventory actual instructional practice. The items represented several areas of kindergarten instruction as specified in the NAEYC guidelines: curriculum goals, teaching strategies, guidance of socioemotional development, language development and literacy, cognitive development, physical

development, aesthetic development, motivation, and assessment of children (Charlesworth, Hart, Burts, & Hernandez, 1990, pp. 12-13).

The questionnaire was administered to 113 kindergarten teachers in four southern states. Respondents were asked to provide demographic information regarding their education and teaching experience and to estimate the percentage of influence each of the following have on their planning and implementation of instruction: parents, parish or school system policy, principal, teacher (themselves), state regulations and other teachers. They were asked to assign the percentages so that the sum of all six categories was 100% (Charlesworth et al., 1990, p. 12).

Classroom observations were used to validate the accuracy of individual teacher's questionnaire responses, using the Checklist for Rating Developmentally Appropriate Practice in Kindergarten Classrooms, a 27 item observational instrument. Items were constructed corresponding to the NAEYC guidelines for children ages 5 to 8 (Bredekamp, 1987). Areas included were curriculum goals, teaching strategies, integrated curriculum, guidance of socioemotional development, motivation, parent-teacher relations, evaluation, and transitions (Charlesworth et al., 1990, p. 15).

Correlational analyses were used to determine the relationships between teacher's perceptions of their own beliefs and practices. Developmentally appropriate beliefs were moderately correlated with developmentally appropriate practices ($r=.63$, $p=.000$); a stronger relationship was found between teacher's developmentally inappropriate beliefs and inappropriate practices ($r=.71$, $p=.000$). Charlesworth et al. suggested that the moderate nature of the correlations between beliefs and practices may be related to the availability of the appropriate activities. They noted that in some kindergarten classrooms

teachers may make appropriate activities available each day but limit access. For example, students may have to finish a mountain of workbook and worksheet activities before having an opportunity to go to the centers where they can explore more appropriate materials. Thus only the more capable, faster workers have access to these materials. In other classrooms appropriate materials are used, but only in large group activities. This usually means waiting for everyone to complete a task before moving on to the next, again placing a limitation on access. Teachers' responses to the inappropriate items may be better predictors of what is really going on in their classrooms than their responses to the appropriate items. (p. 30)

Responses to the question about influence on teacher planning and implementation of instruction varied among teachers. The teachers who had the strongest appropriate beliefs and who offered appropriate activities most frequently felt they had greater control over their

planning and implementing of instruction. Teachers who had more developmentally inappropriate beliefs and practices viewed outside forces such as principals and parents as having more influence on their planning and instruction. Charlesworth et al. (1990) speculated that the more strongly appropriate teachers may have educational backgrounds which were more child development oriented, may be people with stronger self concepts who stand up for their beliefs, or may have a better articulated theory underlying their practices , while teachers with less appropriate beliefs and practices may rely more on opinion in forming their implicit theories and thus turn to outside forces as the determinants of their instructional programs (p. 32).

Some of the more inappropriate teachers we visited told us that they 'know better' but that the parents and/or principal demanded that they use inappropriate activities. On the otherhand, we have also talked with teachers who firmly believe that the inappropriate activities and materials are 'appropriate.' Our results support the need for principals and parents to become educated regarding developmentally appropriate educational practices for young children. (Charlesworth et al., 1990, p. 32)

In a study utilizing the same Teacher Beliefs Scale, Instructional Activities Scale, and Checklist for Rating Developmentally Appropriate Practice in Kindergarten Classrooms, researchers explored the relationship between appropriate and inappropriate practices and stress

behaviors in kindergarten children (Burt, Hart, Charlesworth, Hernandez, Kirk, & Mosley, 1989). Based on the results of analysis of the observational checklist for rating developmentally appropriate classrooms, two classes were selected: one represented a developmentally appropriate kindergarten setting and the other a developmentally inappropriate kindergarten setting. These two teachers were then asked to complete the Teacher Beliefs Scale and Instructional Activities Scale. The 37 children in these two classes were observed using a classroom child stress behavior instrument. Items selected for this observational tool were derived from an extensive review of literature that documents manifestations of stress in child behaviors.

Results indicated that children in the developmentally inappropriate class exhibited significantly more stress behaviors than did children in the developmentally appropriate class; males exhibited more total stress behaviors than females. According to Burt et al. (1989, p. 9), these findings provide empirical data to support the position of Elkind (1986), Schweinhart and Weikart (1988), Gallagher and Coche (1987), and Shepard and Smith (1988) who have warned of the negative consequences of inappropriate practices. Differences were also found between the two classes in

time devoted to various activities, with the more appropriate classroom exhibiting more center activities, group stories, and transition activities while the inappropriate classroom had more whole group and workbook/ worksheet activities. Burt et al. suggest that these findings are what one would expect based on the NAEYC guidelines (Bredekamp, 1987) and help confirm the validity of the teacher questionnaires and the classroom observation scale in identifying appropriate and inappropriate classrooms.

Building on the work of Bussis, Chittenden, and Amerel (1976), Halliwell (1980) identified and analyzed the meanings that three kindergarten teachers attached to the curriculum and activities in their classrooms. To arrive at the constructs that these kindergarten teachers held, Halliwell observed the classrooms and interviewed the teachers. The teachers were provided with opportunities in the interviews to clarify their reasons for and the meanings of the activities and interactions which took place in their classroom.

Halliwell found that the teachers were guided by the district "curriculum guide." However, the three teachers differed in the amount of emphasis they attached to the guide and in the emphasis placed on different areas of the guide. Each teacher responded to her perception of

the needs of the group of children with whom she was working. A teacher mainstreaming handicapped children into classroom activities showed special concern that these children participate and feel a successful part of the group. Her priorities included helping children to enjoy school, to get along with others, and to experience academic growth. A second teacher wanted her program to be responsive to individual children's interests. Her priorities were to help children to get along with one another and to develop thinking skills in the areas of reading, writing, math, and social studies. The third teacher wanted to encourage children to care about themselves and others, to feel responsible for their own learning, and to acquire a broad base of concepts and skills.

Halliwell concluded that these teachers' constructs illuminated the reasons for their own particular actions and for the development of particular activities and interactions in their respective classrooms. She determined that the consistency of teaching practice in each of these classes could be understood in terms of each teacher's particular constructs.

Primary Teachers

Working with a sample of 182 teachers from Goodlad's study of schooling (1983), Bauch examined the degree to which the instructional beliefs of teachers influence their behavior in the classroom. Bauch's theoretical conceptions described belief systems as a psychological filter which selectively attends to and admits information from the environment. The individual's beliefs are viewed as predispositions to action, in that beliefs screen the information available for the formation of attitudes, which influence intentions, which are the basis for decisions that lead to related behavior (1984, pp. 2-3). The model of beliefs used by Bauch assumes that an individual's beliefs are organized around underlying points of reference which represent something that is important to an individual--"criterial referents." Bauch's study attempted to identify from among two belief referents (teacher control and student participation), the degree to which one or both was held, and the extent to which they seemed to influence classroom teaching behavior and student perceptions of the classroom environment (Bauch, 1984, p. 4).

Bauch explored elementary school teachers' beliefs using a paper-and-pencil inventory, the Teacher Beliefs Inventory. She assessed teacher practice through

questionnaires, interviews, and direct observation of instruction using a modified version of the Stallings Classroom Observation Instrument. Basing her judgments on the belief dimensions of teacher discipline and control and student participation, Bauch labeled teachers as controllers (scoring high on teacher control, but low on student participation), strategists (high on both), laissez-faire (low on both), or relators (low on teacher control and high on student participation). Bauch's discussion of the results focused on the two groups of teachers for whom one of the constructs was criterial: controllers and relators.

Bauch found that teachers' instructional beliefs were generally consistent with their teaching behaviors. Controller teachers were found to express both in belief and practice classroom curriculum and instructional behavior different from relator teachers. Controllers tended to employ lecturing, writing, and test-taking as their primary methodology. Controller teachers reported that they were more influenced by curriculum guides, standardized test results, textbooks, and commercial materials than by student background and preferences in planning for teaching. In contrast, relators tended to promote student self-direction through such activities as class discussions, dramatizations, projects, and

experiments. In planning for teaching, relators considered student preferences, interests, and abilities and evaluated students based on student projects, reports, and performances.

Bauch (1984) attributed the difference in belief systems to the philosophical presuppositions held by each group of teachers. Each group was seen as having different assumptions about human nature, the locus of culture, and the center of values (society vs. individual) (p. 20).

Spodek and Rucinski attempted to arrive at teachers' constructs, as "theory-in-use," by asking them to respond to actions that take place in their classroom (1984). Observations of ongoing classroom activities were recorded from three first grade classrooms. Observers reviewed the notes taken during observations and identified decisions that were made by each teacher. Descriptions of the teachers' actions and their contexts were abstracted. Teachers were interviewed about the decision situations. Interviews were audiotaped and transcribed, wherein statements of beliefs were identified by researchers. Statements of beliefs were edited and presented to the teachers for confirmation or modification. Statements were organized into ten content areas and statements of belief about values (representing

the "oughts" and "shoulds" of education) were separated from beliefs about fact (descriptive of attributes of schools, teachers, children, parents and other adults and the relationship between such attributes) (Spodek & Rucinski, 1984, p. 15). Although there was a great deal of differences in the number of statements generated by each teacher, the proportion of value-oriented belief statements to technically-oriented statements was nearly identical among the three teachers: 60% technical or "fact" beliefs and 40% "value" beliefs (p. 16).

Researchers were also able to identify three categories which generated the highest number of beliefs for each teacher (classroom management, learning, instructional practices). Spodek suggests that since these three categories predominated in the statements of all three teachers, they may reflect the focus of teaching in the primary classroom. The prevailing perception was that a class needs to be well managed for any teaching to occur. Once management is accounted for, the focus of the teacher is on instruction and learning--the prime role of the school. Teacher beliefs are "related to the purposes of primary education and what teachers need to do to achieve these purposes" (1984, p. 23). Spodek further asserts that the manner in which these beliefs were generated, focusing on theories-in-use rather than

espoused theories, lead them to be consistent with each teacher's practice (p. 22).

In presenting background to their study, Regan and Weininger (1988), acknowledge that a recurring debate in kindergarten and primary education is the kind of program appropriate for these early school years. Recently, lack of agreement concerning the "what" and "how" of early school experience has been complicated by demands for "accountability," "excellence," and getting "back to the basics" (p. 2). According to Regan and Weininger, child centered education has become the target of critics who claim that "basics" have been abandoned in the primary school years.

Regan and Weininger (1988) suggest that supporters of child centeredness often have difficulty defending what is

both a philosophy and a particular approach to classroom practice...Teachers committed to the ideas that education should be responsive to children's needs, and that children should feel and be involved in their own education, are sometimes less certain of what this commitment means with respect to program design and teacher role in the classroom...As a result, they fall prey to critics who suggest a lack of focus or goals and call for programs directed toward more standardized and measurable outcomes. (p. 2)

In this study, videotapes were made of exemplary child centered practice and the teachers involved were asked to describe and explain what was happening in the

illustrations selected. The objective was to develop a means for illustrating what exemplary child centered practice looks like and to allow teachers to share their goals and how they went about achieving these goals. The six teachers chosen were committed to a child centered approach. Criterion for determining child centered practice was evidence that the program of activities, experiences and teacher-child interactions in the classroom was "continually responsive to, and adapted for, the needs of children in that particular setting at that particular time" (Regan & Weininger, 1988, p. 3).

Teachers were asked to describe, in writing, "the beliefs that explain and guide your practice." Regan and Weininger explained that the concept of "beliefs" was chosen in exploring teacher thoughts about their practice for two reasons. First, this concept as discussed by Sigel (1987) was seen as meeting the purposes of the investigation. Sigel refers to beliefs as "truth statements held by an individual" derived from many sources, which are "at the core of much of our actions" (Sigel, 1987, p. 216). According to Regan and Weininger (1988), their observations suggest that what guides practice in a setting is a combination of the teacher's assumptions regarding how children develop and learn and his/her educational values, which are continually

influenced by teaching experience. A second reason for choosing the construct "beliefs" was the researchers' judgment that "asking teachers to identify 'beliefs' rather than 'theories' and 'goals and objectives' might produce a more personal and valid expression of what was at the core of their thinking" (p. 4).

In their analysis of primary teachers' written responses, Regan and Weininger organized teacher "belief" statements into three categories: (a) assumptions about child development and learning, (b) principles of practice--articulating program goals and guidelines, and (c) practice prescriptions--specifics associated with daily classroom activities and teacher-child program interactions.

Based on their own analysis of the videotapes and the written responses of graduate students who were asked to identify beliefs about children, teaching, and educational goals reflected in the videotape and the teacher descriptions of the setting, Regan and Weininger concluded that

education that is responsive to children, engaging them in their own learning and promoting their sense of self worth is not without focus or direction when guided by teachers able to successfully combine a sense of educational purpose and sensitivity to children. (1988, p. 9)

Principals/Implications for Supervision

Nespor (1987) suggests that to understand teaching from teachers' perspectives we have to understand the beliefs with which they define their work. She asserts that teaching takes on different meanings for different teachers, and failure to recognize this impairs any attempt to make sense of what teachers do in the classroom or why they do it. If the ultimate goal of research on teaching is to shape, direct, or improve the practices of teachers, "then the reasons that teacher have for acting as they do--reasons which make them more or less amenable to advice and training--must be examined" (Nespor, 1985, p. 3).

According to Munby (1983), because teaching events occur in very particular contexts, any attempt to improve a teacher's practice must consider the uniqueness of the context and the individual teacher. This includes obtaining knowledge about the nature of the beliefs and principles teachers hold. Munby refers to clinical supervision (Cogan, 1973; Goldhammer, 1969) as an option which allows the supervisor to address teacher behaviors and the beliefs or principles which influence teacher behavior. "One could say that one of the many demanding tasks to be handled by the clinical supervisor is that of

having the teacher face and evaluate his or her beliefs" (Munby, 1983, p. 10).

Expanding on this idea, Kaplan-Sanoff (1980) asserts that teachers who can identify their theoretical assumptions and classroom strategies related to child learning are better able to make daily educational decisions based upon a rational and consistent framework of beliefs. In addition, teachers who are able to explain their goals and how their strategies will achieve these goals can justify their teaching positions to principals and parents and are more likely to receive their support. Kaplan-Sanoff contends that teachers should be able to identify their own teaching behavior and their ideal teaching beliefs. Teachers and supervisors can then identify the difference between actual classroom behavior and theoretical teaching beliefs and work toward making practices and beliefs more congruent.

With respect to knowledge and beliefs concerning developmentally appropriate practice, Hatch and Freeman (1988a) reported that 50% of principals and supervisors in their study held maturationist or interactionist beliefs even though the majority of the kindergartens in their schools operated according to a behaviorist orientation to learning and development--highly

structured, skill-based, academically focused and based on a direct instruction model. The researchers labelled this discrepancy between philosophies of education and the realities of classroom practice a "philosophy-reality conflict." This conflict was even more prevalent for the kindergarten teachers; 66% of whom expressed maturationist or interactionist beliefs.

In a study by Hoot, Bartkowiak, and Goupil (1989), principals were found to have a better knowledge of developmentally appropriate practice at the kindergarten level than primary and intermediate teachers. They suggested that an explanation for this finding might be that administrators somehow manage to keep up with current information in their fields through journals or workshops. These researchers expressed an interest in research to see if these administrators managed to support the implementation of appropriate programs based on their beliefs, citing a number of obstacles to such implementation by administrators. As they cited,

Administrators, even more so than teachers, are pressured to ensure that children learn in their programs. Parents exert heavy pressure on administrators. Commercial curriculum developers influence administrators to purchase kits or textbooks that they claim will help children excel. But most importantly, public school administrators are required to implement various policies mandated by the local school system or state. (Bredekamp, 1987, p. 84)

Brousseau and Freeman (1987) discuss the various panels and commissions such as the National Commission on Excellence in Education (1983) which have dramatized the problem of educational ineffectiveness and call for reforms to improve education. They cite Odden (1984) who points out that the recommendations suggested by these commissions generally focus on what might be called the "'hardware of educational excellence' (i.e., programs, standards, and requirements), and seem to propose 'reform by addition.' What may be more important to school improvement is reform by reallocation and internal change" (Odden, 1984, p. 312). Similarly, Goodlad (1983) argues that developing the capacity of each school to change and improve may be the only effective strategy for reforming education. According to Brousseau and Freeman (1987), a first step toward understanding how to affect the process of schooling is to understand the values and beliefs underlying those processes. They further assert that a clear description of the educational beliefs of a school's staff is an important contribution in efforts to understand a teaching culture, the importance of which is supported by Deal (1985), who states "unless local educators understand and reckon with the existing culture of each school, the introduction of commissions' recommendations or characteristics of

effectiveness will probably not work; it may even do more harm than good" (p. 604).

Teacher Education

According to Mayer (1985), teacher education in America has always had a tendency to be practice-oriented as opposed to theory-oriented. He cites research which suggests that the beliefs teachers hold are an important determinant of teaching behavior and that those teachers who do operate from beliefs and theory are in fact more effective teachers than those who operate at a more concrete level (Brown, 1969; Buchman, 1983; Olson, 1981). Mayer argues that findings from research on teacher beliefs justify devoting more time in teacher education to the issue of teacher beliefs.

When educators contemplate reforms in teacher education curricula, they often think in terms of changes that will upgrade teacher candidates' professional knowledge or teaching skills. However, some educators believe that when attention centers on efforts to improve the way prospective teachers will ultimately act in their classrooms, it is apparent that teacher education must also consider educational dispositions and beliefs (Brousseau & Freeman, 1987; Katz & Rath, 1985).

Nespor contends that "even prospective teachers have conceptual systems--no matter how implicit and unsystematized these may be--for making sense of, evaluating, and justifying the things that go on in classrooms" (1985, p. 3). Nespor sees two responses possible to deal with the influence of beliefs in defining and shaping tasks in teaching. One would be to transform teaching into a set of well-defined tasks by teaching prospective teachers recipe-like pedagogical methods and closely monitoring the performance of teachers. Another response would be to try and change or shape teachers' beliefs. This would require assisting teachers and prospective teachers to become consciously aware of their beliefs, and as Fenstermacher (1979) suggests, presenting objective data on the adequacy or validity of their beliefs. Fenstermacher contends that teachers' beliefs and practices will be transformed only if alternative or new beliefs are available to replace the old. He argues, "there is a critical difference between studying what makes teachers effective and teaching teachers to be effective" (1979, p. 175). According to some, this implies that teacher education must build or displace existing systems of beliefs and knowledge held by prospective teachers (Feiman-Nemser & Floden, 1986; Floden, 1985; Nespor, 1985). Lortie

(1975) explains the existence of beliefs about education in preservice teachers as a process of internalizing the modes of practices of their own teachers while they were students , in his words, an "apprenticeship-of-observation" as students.

In a study designed to determine faculty definitions of desirable teacher beliefs, Brousseau and Freeman (1987, 1988) administered a modified version of the "MSU Educational Beliefs Inventory" to instructors in five undergraduate teacher education programs offered by Michigan State's College of Education. This instrument consists of statements that are intended to reflect a representative sample of beliefs for each of Schwab's (1958) four commonplaces of schooling (students, curriculum, social milieu, and teachers) plus a fifth category designed to capture beliefs about pedagogy. The results indicated that faculty did not always agree on the ways in which a particular belief should be shaped. There were also significant differences in the extent to which beliefs were handled across courses in the program. Faculty members reported they were far more likely to emphasize beliefs with which they wanted graduates to agree than issues on which they felt students should adopt their own informed positions. Faculty members typically reinforced (rather than challenged) prevailing

educational beliefs of entry-level teacher candidates: faculty members were more likely to emphasize issues on which they and their students already agreed than beliefs on which there was a conflict between students' initial position and those which the faculty viewed as desirable. The researchers concluded that teacher preparation programs have a limited influence on teachers' orientations and beliefs due to a lack of agreement among program faculty as to the ways in which beliefs should be shaped and the failure of the faculty to challenge inappropriate prevailing beliefs or to encourage students to form their own opinions on certain educational issues.

Providing students with a sound understanding of theory is one aim of teacher education. Of the theories which describe human growth and development, three major approaches to developmental psychology have most influenced early childhood education: behaviorist, developmental, and maturationist (Kolhberg, 1968; Maier, 1969; Seaver & Cartwright, 1977). Because students entering teacher education programs have their own personality patterns and styles of interacting with people, they will generally agree more consistently with one of the developmental theories than with the others (Gonzalez-Vargas, 1984). Some educators propose exposing students to a comprehensive view of philosophical and

developmental perspectives to encourage students to clarify and modify their own views (Kaplan-Sanoff, 1980; Seaver & Cartwright, 1977). Kaplan-Sanoff proposes that the goal of teacher education should be to produce graduates who are able to articulate and defend their own beliefs about the teaching-learning process. Teachers should have a sound understanding of principles of child development and learning theory and articulate those beliefs in terms of educational goals. Accordingly, their teaching can be purposefully directed towards developing an educational program and goals consistent with the ability and need levels of the children (Brandt & Gunter, 1981; Kaplan-Sanoff, 1980). Teacher education programs need to integrate philosophy, theory and practice in such a way as to encourage prospective teachers to develop a rationale for their actions and decisions (Gonzalez-Vargas, 1984 ; Seaver & Cartwright, 1977).

Cohen, Peters, and Willis (1976) investigated the effects of four different models of early childhood education on the preferences, beliefs, and behaviors of student teachers. They operationally defined beliefs as the more deeply held feelings about the early childhood education process; those feelings which were not so deeply ingrained were categorized as preferences.

Beliefs were felt to be basic to the student teacher's orientation toward preschool education.

Fifty-five beginning and 25 advanced undergraduate women students at Pennsylvania State University were randomly assigned to one of four models of early childhood education programs maintained by the university: a precision-positive model based on operant theory (PP); a cognitive-developmental model based on Piagetian theory (CD); a responsive environment model based on the theories of Piaget, Montessori, and O.K. Moore as they are integrated into a variation of the New Nursery School curriculum of Nimnicht, McAfee, and Meir (RE); and a day care model based on a whole child approach to early childhood care (DC) (Cohen, Peters, & Willis, 1976, p. 15).

Three measures were administered prior to practicum assignment and readministered after completion of student teaching practicum: (a) a program preferences questionnaire wherein students were asked to rate their preferences for each program on a 7-point scale from strongly desired to strongly opposed, (b) a Teacher Beliefs Rating Scale consisting of 24 Likert-type items derived from both Piagetian and operant learning theory, and (c) a Teacher Behavior Observation Form to observe

student teacher interactions with children in the early childhood program (Verma & Peters, 1975).

It was hypothesized that student teachers would change their preference for particular program models in favor of the program model to which they were assigned. This was found to be true for the Cognitive-Developmental and Responsive Environment programs. However, the Precision Positive model was the least preferred by all students, including those students who were assigned to that program. Overall, student teachers showed stronger beliefs in the Cognitive-Developmental model than in the Precision Positive model. A significant main effect indicated that beliefs in both models which were expressed after the practicum were less than those expressed before the practicum. This finding was contrary to the hypothesis that no change would occur in beliefs . The behaviors of the student teachers in the Precision Positive and Cognitive-Developmental programs were found to be consistent with the theoretical rationale underlying each program . The researchers concluded that both preferences and beliefs of student teachers may be altered by the influence of a student teaching practicum. They caution that care must be taken in teacher training programs "to be certain that beliefs which are subject to change do not change in such a way

as to decrease the flexibility of the teacher to modify his or her behaviors in future teaching situations" (Cohen, Peters, & Willis, 1976, p. 20).

Importance of Congruency Between Beliefs and Practice

Dobson and Dobson have argued that beliefs-practice congruency is an element of good teaching; teachers function more effectively and real improvement in schooling occurs only when teachers are experiencing beliefs-practice congruency (1983).

Several educators speak to the importance of consistency of theoretical or conceptual basis with instructional methods so that specific objectives are logically related not only to the rationale but also to the content of the curriculum and the evaluation scheme (Katz, 1977; Mori & Neisworth, 1983; Moyer, 1986; Spodek, 1978). Katz (1977) suggests that the actions of mature professionals are guided by a set of internalized personal beliefs. Dobson and Dobson state that a "set of beliefs enables a teacher to order priorities, establish goals, identify activities, analyze conflicting proposals, and convert controversy into meaningful school experiences" (1983, p. 22).

According to many early childhood experts, theories help professionals understand children's behavior, serve

as a basis for selecting and evaluating methods and activities, bring meaning to program design and provide the intellectual content for professional training of teachers (Seaver & Cartwright, 1977; Spodek, 1978).

According to Seaver & Cartwright,

developmental theory provides a general context in which one can view individual acts and behavior. It simultaneously allows for a description of current events and a prediction of the direction of later development. Realization of the general goal of facilitating children's development depends on the availability of a comprehensive framework for decision making. When an explicit theoretical basis is present for a program, both the content of the curriculum for children and the methods of implementing the program are seen as logical extensions of the assumptions given in the developmental theory. (1977, p. 324)

Dobson and Dobson speak to the results of teaching without a theoretical framework.

Teaching practice without the support provided by a well-developed philosophy (set of beliefs) proceeds at random, blindly. Teaching without purpose becomes mere activity to 'get things done' with little consideration of means-end compatibility. Our culture seems to encourage a pragmatic approach toward almost every activity. Teachers are part of the culture and tend to reject philosophy and approach each task without concern for keeping their beliefs-practice consistent and harmonious. (1983, p. 21)

Lack of Congruency Between Teacher Beliefs and Practice

Many studies have found the relationship between teacher beliefs and teacher practice to be incongruent. Data analysis and researcher supposition suggest that the

reasons for these findings include influences upon the teacher by external environmental factors and influences within the teacher.

The external environmental influences include (a) expectations of principals, other teachers, parents, and the general public (Duffy, 1981; Hatch & Freeman, 1988b; Hoot et al., 1989; Hyson, Hirsh-Pasek, & Rescorla, 1989; Moyer, 1986; Shepard & Smith, 1985, 1988); (b) accountability mandates from the district and state requiring measurement of student achievement (Bredekamp & Shepard, 1989; Duffy, 1981; Hatch & Freeman, 1988b; Hoot et al., 1989; Shepard & Smith, 1985); (c) published materials such as basal textbooks and curriculum guides (Duffy, 1981; Duffy & Anderson, 1984; Hatch & Freeman, 1988b; Hoot et al., 1989; Kamii, 1985; Mayer, 1985); (d) student characteristics (Duffy, 1981; Duffy & Anderson, 1984; Hatch & Freeman, 1988b; Mayer, 1985; Shepard & Smith, 1985); and (e) working conditions such as material shortages (Gonzalez-Vargas, 1984) and shortage of time (Hitz, 1986).

The influences within the teacher include: (a) teachers' actions based upon personal values and experiences rather than theory (Spodek, 1988); (b) teachers' actions influenced by conflicting values and beliefs (Berlak, Berlak, Bagantos, & Midel, 1975;

Pearson, 1985); and (c) teachers' uncertainty of how to translate beliefs into practice or link psychological theories to educational practice (Hitz, 1986; Kamii, 1985; Regan & Weininger, 1988; Seaver & Cartwright, 1977).

Hatch and Freeman (1988a) reported discrepancies between the educational philosophies of teachers, principals, and central office personnel and actual classroom practices. In analyzing interviews from 36 respondents, the researchers suggested several sources of pressure which resulted in this "philosophy-reality conflict": (a) changing characteristics of children, (b) expectations of parents, (c) accountability to the district and state, (d) expanded reliance upon published materials, and (e) expectations of the general public (p. 146).

Reaching a similar conclusion, Moyer states "meeting the demands of parents, the administration, and the public sometimes seems to conflict with what teachers know is best for young children" (1986, p. 327).

In a four-year study examining whether teachers use implicit theories of reading to select certain instructional alternatives over others, Duffy and Anderson (1984) found some congruence between teacher practices and their belief systems about reading.

However, the relationship was not strong. The researchers concluded that teachers make decisions for a variety of reasons. While some of the teachers' decisions reflected implicit beliefs about reading, many reflected beliefs about the nature of instruction and classroom life--classroom management and routine, amount of assistance and structure needed by low or high ability pupils, and the social/emotional characteristics of students (1984, p. 102). Teaching context (grade level and/or ability of pupils) was found to be more influential than any particular theoretical belief. In addition, instruction appeared to be based more on the basal textbook than the espoused theoretical orientation of the teacher: almost all the teachers used the basal in the standard manner.

In a study of kindergarten retention practices, Shepard and Smith (1985) identified pressures felt by kindergarten teachers to engage in certain classroom practices. Teachers indicated pressure was caused by the extreme diversity in ability levels of the students in the kindergarten. Teachers also felt pressure in the form of increased emphasis on academic achievement in the kindergarten. The source of this pressure included parental expectations for student progress, expectations for student performance by first grade teachers, and

district guidelines specifying the distribution of instructional time in the classroom (pp. 172-176).

In an article entitled How Best to Protect Children from Inappropriate School Expectations, Practices, and Policies, Bredekamp and Shepard (1989) noted that often teachers are prevented from doing what is best for children by pressure to produce specified scores on standardized tests. They claim that "high stakes testing" is a reality in primary schools today. Testing is referred to as "high stakes" because test results are used to determine promotion or retention, are used to evaluate teachers and administrators, affect the allocation of resources to school districts, and influence changes in the curriculum (p. 14). According to Bredekamp and Shepard, indicative of the high stakes nature of the testing of young children are commercial publishers who produce curriculum kits on test-taking skills for pre-kindergarten, kindergarten, and first graders or sponsor "CAT Academies" to prepare kindergarteners to take the required California Achievement Test, or publish books like The Baby Boards: A Parents' Guide to Preschool and Primary School Entrance Tests (Robinson, 1988) as cited in Bredekamp and Shepard (1989, p. 15).

According to Spodek (1988), teachers' actions and classroom decisions are driven by their perceptions and beliefs. They create conceptions of their professional world based upon their concept of that reality; teachers interpret their perceptions in terms of the theories they hold implicitly. These interpretations then become the basis for teachers' decisions and actions in the classroom. However, as discovered by Spodek, relatively few of the theories used by the teachers were grounded in reliable knowledge of child development. Rather, the "teachers' decisions were often opportunistic and seemed to be rooted in a form of personal practical knowledge rather than the technical knowledge of child development and learning theory" (1988, p. 27).

In a study of three British primary schools, knowledge of how teachers constructed their own teaching behavior was gained through extended observation and interviews with teachers (Berlak, Berlak, Bagantos & Midel, 1975). Teachers were given an opportunity to explain reasons for their behavior. It was concluded that the observed inconsistencies in teachers' behavior in the classroom were due to complex and conflicting values and meanings. "Rather than respond to a consistent set of beliefs, these teachers often held contradictory beliefs. Thus, their decisions took the

form of resolving dilemmas, often in terms of a particular situation" (Berlak et al., 1975, p. 240).

In a similar study involving observation and interviews with teachers, Pearson (1985) also found an incongruency existed between teachers' described beliefs and their actual behavior associated with these beliefs. Pearson suggested that an apparent reason for this discrepancy was due to the fact that the incongruent beliefs were in conflict with other congruent and more relevant beliefs. Teachers' classroom behavior thus reflected their choice to teach the most relevant beliefs, sacrificing total consistency between belief and behavior (p. 142).

In a study of issues in kindergarten education, researchers found educators implementing academically oriented practices in the kindergarten while espousing more developmentally oriented beliefs (Hitz, 1986). Analysis of questionnaire responses revealed an interesting perception of the source of pressure to push the kindergarten curriculum toward more of an academic emphasis.

The pressure may be more imagined than real since both principals and teachers seem to agree on basic curriculum issues. Lack of communication between teachers and district administrators and parents may cause each group to see the other as the source of 'pressure.' (Hitz, 1986, p. 4)

Hitz offered several explanations for this discrepancy between espoused educator beliefs and classroom practices. These included lack of time (a 2 1/2-hour kindergarten day) which predisposed teachers to use workbooks and other direct instruction approaches perceived to be more efficient ways to teach basic skills, the teachers' uncertainty of how to translate a developmental approach (use of dramatic play, open-ended materials and activities) into teaching practice meeting district objectives, and the difficulties in documenting student achievement without the concrete products that workbooks and tests produce (Hitz, 1986, p. 4).

Seaver and Cartwright (1977) and Kamii (1985) contend that often a conceptual link is needed between theory and practice.

When early childhood educators speak of child development, they are referring not to descriptive or explanatory theories but to a philosophy or an approach to education. This philosophy may be excellent, but it represents an intuitive leap from psychological theories to educational practice, without precise theoretical links between the two. (Kamii, 1985, pp. 3-4)

CHAPTER 3

RESEARCH METHODOLOGY

Introduction

This chapter describes the methods used to conduct the study. It is divided into the following four sections:

- 1) summary of research questions and methods
- 2) descriptions of subjects
- 3) instrumentation
- 4) research procedures

Summary of Research Questions and Methods

The research questions were investigated in the following ways:

1. To what extent are the espoused beliefs of primary teachers, principals, and teacher educators consistent with the NAEYC guidelines for developmentally appropriate practice for 6 to 8 year olds?

Data were collected by administering the Teacher Beliefs Scale to first and second grade teachers, a corresponding version entitled Principal Beliefs Scale to principals of elementary schools, and an Educator Beliefs Scale to faculty members of early childhood and elementary education programs (see Appendix A).

Data were computed as total scale means. Belief Scale means above 3.0 were considered to be more developmentally appropriate than inappropriate and thus consistent with NAEYC guidelines.

2. Is there a difference in the beliefs of primary teachers, principals, and teacher educators regarding appropriate primary curriculum and instructional practices?

Data were computed as total scale means. Differences in beliefs between the three groups of educators were investigated with a one-way analysis of variance. Data analysis tested the null hypothesis that there is no significant difference between the beliefs of teachers, principals, and teacher educators.

3. What is the relationship between developmentally appropriate and inappropriate beliefs?

Comparing means on the inappropriate belief items and means on the appropriate belief items of the Teacher Belief Scale, a correlational analysis was used to test the null hypothesis that there is no significant relationship between appropriate and inappropriate beliefs.

4. To what extent are primary teachers implementing practices which are consistent with the NAEYC guidelines for developmentally appropriate instructional practices for 6 to 8 year olds?

Data were collected through a self-report questionnaire administered to all first and second grade teachers (the Instructional Activities Scale) and through

observation of a subsample of twenty primary teachers using the Checklist for Rating Developmentally Appropriate Practice in the Early Childhood Classroom (see Appendices B and D).

Data for the Instructional Activities Scale were analyzed according to the mean scores which indicate the self-reported availability of each classroom activity. Data from the Instructional Activities Scale and the Checklist for Rating Developmentally Appropriate Practice were reported as mean scores, with mean values of 1 representing highly inappropriate practice and mean values of 5 representing highly appropriate practice.

5. What is the relationship between appropriate classroom instructional practice and inappropriate instructional practice?

The relationship between appropriate practice items and inappropriate practice items on the Instructional Activities Scale was investigated with correlational analysis to test the null hypothesis that there is no significant difference between appropriate and inappropriate instructional practice items.

6. What is the congruence between the beliefs of primary teachers and their teaching behavior in the classroom?

Data analysis tested the null hypothesis that there is no significant relationship between teacher beliefs and classroom teaching behavior. Relationships among the

variables were evaluated with Pearson correlations comparing mean scores on the Teacher Beliefs Scale with those on the Instructional Activities Scale and the Checklist for Rating Developmentally Appropriate Practice. A dependent t-test was used to investigate differences between beliefs and behaviors on the TBS and IAS.

7. Is there a difference in the level of developmentally appropriate beliefs and practices between those primary teachers with certification in early childhood education and those primary teachers with elementary education certification only?

Teachers were divided according to information provided on the cover sheet of the questionnaire regarding background as to level of certification.

Differences in level of developmentally appropriate beliefs and practices as a function of certification level were analyzed with multivariate analyses of variance. Data analysis tested the null hypothesis that there is no significant difference between those teachers with certification in early childhood education and those teachers with elementary certification only in the level of their developmentally appropriate beliefs and practices.

Description of Subjects

Subjects were selected from a sample of first and second grade teachers from public schools in Denver and three surrounding counties (Adams, Arapahoe, and Douglas). Twelve urban and twenty suburban schools were selected through random sampling, resulting in a final sample pool of 211 primary teachers. Self-administered questionnaires were mailed to the principal and each first and second grade teacher in the selected schools. Questionnaires were returned by all 32 of the principals and by 142 of the teachers. From this group, a subsample of 20 primary teachers was randomly selected for classroom observation.

Teacher educators were selected from faculty members in teacher education certification programs approved by the Colorado State Department of Education. Seven university and seven colleges were included in this group. Questionnaires were sent to all 65 faculty members at the early childhood or elementary education level. Questionnaires were returned by 45 of these 65 faculty members.

Instrumentation

The Teacher Questionnaire

Data on beliefs regarding developmentally appropriate practice in the primary grades and the actual classroom practices of primary teachers were collected using The Teacher Questionnaire, an instrument that was devised by Charlesworth, Hernandez, Kirk, Hart, and Burts (in press). The content of this instrument was based on the definition of developmentally appropriate and inappropriate practices established by the National Association for the Education of Young Children (Bredekamp, 1987). The Teacher Questionnaire contains three sections.

In the first section, respondents provided demographic information regarding their education and teaching experience. The second and third sections of the questionnaire consists of two subscales: the 36-item Teacher Beliefs Scale (TBS) and the 33-item Instructional Activities Scale (IAS). The items included represent several areas of primary instruction as specified in the NAEYC guidelines (Bredekamp, 1987): curriculum goals, teaching strategies, integrated curriculum, guidance of social-emotional development, motivation, parent-teacher relations, evaluation, and transitions. Each TBS item

is a statement (e.g. It is important for children to learn through active exploration) that the respondent rates on a 5-point Likert scale from not important at all to extremely important. IAS items describe an activity (e.g. playing with games and puzzles; using flashcards with sight words and/or math facts). The respondent rates the frequency of availability of each activity in his/her classroom along a 5- point scale from almost never (less than monthly) to very often (daily). For the purposes of this study, the wording of four Beliefs items and six Activities items was revised slightly to be more consistent with instructional activities usually offered in the primary grades. For example, "building with blocks" was revised to "playing with manipulatives such as pegboards, puzzles, and/or legos."

The order of presentation of the Teacher Belief Scale and the Instructional Activities Scale was randomized across all teachers in the study. To figure total scale means, scoring of items on both measures related to inappropriate practice was reversed so that high scores indicate more appropriate beliefs and practices. For example, the activity "circling, underlining, and/or marking items on worksheets" is considered to be an inappropriate instructional activity for the primary grades, according to the NAEYC

guidelines. It is developmentally appropriate practice for a teacher to circle number 1 for this item on the IAS, indicating that this activity is offered "less than monthly" in the classroom. When interpreting total scale means, the instruments are designed so that a total scale mean near 1 represents inappropriate practice and a mean value near 5 represents highly appropriate practice. Therefore, when figuring a total scale mean on items relating to inappropriate practice, each score of 1 is changed to 5 and each score of 2 is changed to 4 so that high scores indicate more appropriate beliefs and practices.

In an earlier study, the Teacher Beliefs Scale and the Instructional Activities Scale demonstrated good psychometric properties (Charlesworth, Hart, Burts, Mosley, and Thomasson, in press). To assess the factorial validity of the measures, a factor analysis was conducted by Charlesworth et al. Internal consistency was measured by Cronbach's Alpha.

A factor analysis of the Teacher Beliefs Scale produced six reliable factors with Eigen values greater than 1 accounting for 64% of the item variance which, when rotated (varimax) to simple structure, yielded moderate to high item loadings (ranging from .40 to .80)

on the designated factors (Snedecor & Cochran, 1980) and no substantial cross loadings (see Table 3.1).

Four of the six factors were developmentally appropriate beliefs and two were developmentally inappropriate beliefs. The designated teacher descriptors for each of the six factors were: (a) inappropriate activities and materials (basals, workbooks/ditto sheets, flashcards, etc.), (b) appropriate social activities (dramatic play, talks informally with adults, etc.), (c) appropriate individualization (individual differences in development, individual differences in interests, etc.), (d) appropriate literacy activities (see and use functional print, use of invented spelling), (e) appropriate integrated curriculum beliefs (integrated math, health and safety, etc.), and (f) inappropriate structure (evaluation through standardized tests, curriculum as separate subjects).

Subscale reliability was assessed by Cronbach's Alpha. Low to moderate levels of internal consistency (McMillan & Schumacher, 1989) were obtained for items comprising these six factors (.84, .77, .70, .60, .66, and .58 respectively).

Table 3.1

Factor Structure, Eigen Values, Cronbach's Alpha, Means, and Standard Deviations for the Teacher Beliefs Scale

	Activities & Materials	Social	Individualization	Literacy	Items	SD
	I	II	III	IV	X	
I. Inappropriate Activities & Materials						
16 (Basal)	.78				2.55	1.11
14 (Workbooks/Ditto Sheets)	.74				2.65	.81
15 (Flashcards)	.72				3.27	1.17
24 (Prints Letters)	.70				2.65	1.02
4 (Eval./workbk. & worksh.)	.70				3.03	.84
32 (Reading)	.70				2.40	.95
11 (Seatwork)	.61				2.61	1.07
22 (Recognizing Alphabet)	.61				3.78	1.03
17 (Whole Group)	.58				2.93	1.03
23 (Colors Within Lines)	.55				3.34	.92
9 (Selects Own Activity)	-.35				4.21	.78
II. Appropriate Social						
28 (Dramatic Play)		.75			4.51	.66
29 (Talks Informally w/Adults)		.76			4.51	.57
31 (Social Skills w/Peers)		.72			4.74	.50
26 (Dictates Stories)		.44			4.28	.75
III. Appropriate Individualization						
6 (Individual differences in Development)			.82		4.63	.56
5 (Individual Differences in Interests)			.74		4.35	.69
12 (Active Exploration)			.54		4.67	.57
IV. Appropriate Literacy Activities						
27 (See & Use Functional Print)				.74	4.13	.88
30 (Use of Invented Spelling)				.72	3.41	1.13
EIGEN VALUE	7.40	4.41	1.76	1.49		
CRONBACH'S ALPHA	.84	.77	.70	.60		

Table 3.1 (Continued)

	Integrated Curr. Beliefs V	Structure VI	Item	
			X	SD
V. Appropriate Integrated Curriculum Beliefs				
33 (Integrated Math)	.78		4.15	.78
34 (Health & Safety)	.59		4.34	.66
18 (Teacher as Facilitator)	.46		4.69	.54
35 (Multicultural & Nonsexist)	.45		4.13	.75
VI. Inappropriate Structure				
2 (Evaluation through Standardized Tests)		.72	2.74	.85
7 (Curriculum as Separate Subjects)		.52	2.03	.97
EIGEN VALUE	1.44	1.31		
CRONBACH'S ALPHA	.66	.58		

In the aforementioned study (Charlesworth, Hart, Burts, Mosley, & Thomasson, in press), similar analyses were conducted for the Instructional Activities Scale. The factor analysis produced eight reliable factors containing Eigen values from 1.11 to 5.34 accounting for 65% of the item variance which, after rotation, yielded item loadings (ranging from .30 to .84) on the designated factors and no substantial cross loadings (see Table 3.2).

Four factors included developmentally appropriate activities and four factors consisted of developmentally inappropriate activities. The designated factor descriptors for this measure were: (a) appropriate literacy (plays games, listening to records, etc.), (b) inappropriate literacy activities (flashcards, handwriting on lines, ability level reading, etc.), (c) inappropriate learning (rote counting, reciting alphabet, etc.), (d) creative exploratory learning (exploration, creative writing, etc.), (e) appropriate integrated curriculum practices (integrated math, child coordinated activity, etc.), (f) planned multicultural and outdoor activities (multicultural and nonsexist, planned outdoor), (g) inappropriate management and

Table 3.2

Factor Structure, Eigen Values, Cronbach's Alpha, Means, and
Standard Deviations for the Instructional Activities Scale

	Activities	Inappropriate Literacy	Learning	Exploratory	Item	
	I	II	III	IV	X	SD
I. Appropriate Literacy						
6 (Plays Games)	.84				4.69	.64
1 (Blocks)	.77				4.39	.81
11 (Manipulatives)	.74				4.73	.56
2 (Child Selects Centers)	.69				4.39	.92
4 (Listening to Records)	.47				4.63	.67
II. Inappropriate Literacy Activities						
15 (Flashcards)		.79			2.46	1.37
17 (Handwriting on Lines)		.70			2.95	1.27
13 (Ability Level Reading)		.67			3.41	1.52
19 (Copies from Chalkboard)		.66			1.90	1.26
14 (Worksheets)		.57			3.85	1.07
III. Inappropriate Learning						
16 (Rote Counting)			.77		4.34	1.02
18 (Reciting Alphabet)			.73		3.72	1.23
12 (Coloring or Cutting Predrawn Forms)			.64		4.10	.96
IV. Creative Exploratory Learning						
7 (Exploration)				.68	3.23	1.15
5 (Creative Writing)				.49	3.37	1.11
10 (Cute Own Shapes)				.47	3.93	.85
3 (Dramatic Play)				.46	3.66	1.02
9 (Creative Movement)				.39	4.44	.82
EIGEN VALUE	5.34	4.06	1.97	1.75		
CRONBACH'S ALPHA	.79	.79	.72	.62		

Table 3.2 (Continued)

	Integrated Curr. Practices V	Multicultural Outdoor VI	Management/ Guidance VII	Teacher Directed Learning VIII	Item X	SD
V. Appropriate Integrated Curr. Practices						
34 (Integrated Math)	.76				4.50	.73
33 (Drawing, Painting & Art Media)	.56				4.52	.68
32 (Health & Safety)	.51				3.85	.99
23 (Child Coordinated Activity)	.44				4.03	1.04
VI. Planned Multicultural & Outdoor Activities						
30 (Multicultural & Nonsexist)		.74			3.82	1.13
29 (Planned outdoor)		.56			3.56	1.09
VII. Inappropriate Management & Guidance Techniques						
25 (Loss of Privilege)			.75		3.54	1.25
24 (Rewards)			.68		4.28	.93
27 (Use of Isolation)			.61		2.75	1.43
VIII. Inappropriate Transitional Activity						
20 (Sitting 15 min.)				.79	3.09	1.28
21 (Waiting 5 min.)				.61	2.03	1.14
EIGEN VALUE	1.63	1.40	1.27	1.11		
CROWBACH'S ALPHA	.66	.57	.56	.60		

guidance techniques (loss of privilege, rewards, etc.), and (h) inappropriate transitional activity (sitting 15 minutes, waiting 5 minutes). Low to moderate levels of internal consistency were obtained for items comprising these eight factors as measured by Cronbach's Alpha (.79, .79, .72, .62, .66, .57, .56, and .60 respectively).

The Charlesworth and Hart et al. (in press) study concluded that the factors which emerged from both scales were fairly strong and independent and the factors were also conceptually logical, that is, the item clusters fit the NAEYC (1987) appropriate/inappropriate guidelines.

Ten classrooms identified through the questionnaire as being more appropriate than inappropriate and 10 classrooms identified as being more inappropriate than appropriate were observed using the Checklist for Rating Developmentally Appropriate Practice in the Early Childhood Classroom. Observations in these 20 classrooms validated the accuracy of the Teacher Questionnaire (Charlesworth and Hart et al., in press). The 10 classrooms identified as most developmentally appropriate through the questionnaire were also rated as most appropriate by independent observers.

Checklist for Rating Developmentally Appropriate Practice
in Early Childhood Classrooms

Supplementary data on teachers' practices were collected by observing a subsample of twenty primary teachers using The Checklist for Rating Developmentally Appropriate Practice in Early Childhood Classrooms.

This 24-item observational instrument was developed to determine the accuracy of individual teacher's questionnaire responses (Charlesworth, Mosley, Burts, Hart, Kirk, & Hernandez, in press). Items were constructed corresponding to the NAEYC guidelines for children ages 5-to-8 (Bredekamp, 1987). Areas included were curriculum goals, teaching strategies, integrated curriculum, guidance of social-emotional development, motivation, and transitions. An attached interview includes three questions related to parent-teacher relations and evaluation and provides open-ended clarification questions for any of the observation items which could not be rated due to lack of information.

Each item in the observation instrument is rated by observers on a 5-point Likert Scale, the most appropriate practice descriptors are listed under point 5 and the most inappropriate under point 1. Thus a total scale mean near 1 represents inappropriate practice and a mean value near 5 represents highly appropriate practice.

Below each item there was a space for examples observed or explanatory comments from teacher interviews which provided the rationale for the rating given.

Construct and content validity for this instrument derives from the widely accepted definition of developmentally appropriate practice as explained in the NAEYC Guidelines (Bredekamp, 1987), the document from which items on this instrument were developed. In order to provide further content validity for this measure, the researcher presented the instrument to a panel of judges with extensive background in early childhood education who were very familiar with the NAEYC Guidelines (faculty members at Metropolitan State College) to see if they concurred that items listed on each end of the continuum discriminate between appropriate and inappropriate practice as defined by the NAEYC document (see Appendix E). All judges agreed in general with the item descriptors; none were substantially changed or deleted by them. Some suggestions were made to add to the list of descriptors to make more concrete distinctions; these were added to the instrument if two out of the three faculty members made similar suggestions.

No interobserver reliability data were provided by Charlesworth and Hart et al. (in press). For this study, it was considered important that interobserver

reliability be established before the instrument was used for data collection (see section on Observer Training in this chapter). Interrater reliability was figured by means of Pearson product-moment correlation coefficient. Overall results of reliability were as follows: Observer A and Observer B $r = .84$; Observer A and Observer C $r = .81$; and Observer B and Observer C $r = .79$. This was deemed to be an acceptable level of interobserver reliability (McMillan & Schumacher, 1989) and data collection commenced.

Research Procedures

The following sections list in numerical order the steps taken in the administration of each of the instruments and the training of observers.

Administration of the Teacher Questionnaire to Primary Teachers and Principals

1. Letters explaining the study and requesting district participation were sent to districts in the Denver metropolitan area (see Appendix F).
2. School district research administrators were contacted by telephone regarding their willingness to participate in the study. All but two of the districts contacted agreed to participate.

3. After receiving district approval, the researcher sent letters to 70 principals explaining the nature of the study, how it would be conducted, the time involved, and the person to contact with questions (see Appendix G). Principals were asked to return an enclosed postcard indicating their willingness to participate in the study (see Appendix H). Of the 70 principals contacted, 32 agreed to participate. For those principals who declined to participate in the study, the reason given was almost universally that of time pressure and teacher involvement in various committees and projects in addition to their classroom responsibilities.

The 38 schools which chose not to participate did not appear to be systematically different from the participating sample schools as they were randomly distributed geographically throughout the school districts included in the study and they were a mix of urban and suburban schools. Therefore, the researcher decided not to pursue statistical comparisons between those schools which participated in the study and those which did not.

4. A packet of teacher questionnaires was mailed to the 32 participating principals. Principals were asked

to distribute the questionnaires to all the first and second grade teachers in their school.

5. First and second grade teachers were asked to complete the Teacher Beliefs Scale and the Instructional Activities Scale. Of the 211 teachers to whom questionnaires were sent, 142 responded, a response rate of 67%.

6. Principals were asked to complete a version of the Teacher Beliefs Scale wherein the cover sheet requesting background information had been adapted for use with principals and the title had been changed to Principal Beliefs Scale. Of the 32 principals to whom questionnaires were sent, all responded, a response rate of 100%.

7. To promote a good return rate, included with each questionnaire was a teabag and a note inviting the respondent to relax with a cup of tea while completing the surveys (see Appendix I).

8. Postage paid return envelopes were enclosed with each survey.

9. Each survey contained a cover sheet explaining that the confidentiality of the respondent was guaranteed (see Appendix J).

Administration of Educator Beliefs Scale to Teacher Educators

1. From a list of approved teacher certification programs provided by the Colorado State Department of Education, the researcher identified early childhood and elementary education programs located in the state of Colorado.

2. The researcher called each program identified to obtain names of all teacher education faculty members.

3. Ninety-three teacher education faculty members were mailed a questionnaire. This questionnaire was a version of the Teacher Beliefs Scale wherein the cover page requesting background information had been adapted for use with teacher educators rather than teachers and the title had been changed to Educator Beliefs Scale.

4. Postage paid return envelopes were enclosed with each survey.

5. Each survey contained a cover sheet explaining that the confidentiality of the respondent was guaranteed.

6. Of the 93 teacher educators contacted, 28 explained that they did not feel qualified to complete questionnaires because they were involved in secondary education exclusively or that they were only teaching assistants whose names were mistakenly given to the

researcher as faculty members. Of the 65 qualified teacher education faculty members, 45 returned questionnaires, a response rate of 69%.

Administration of the Checklist for Rating Developmentally Appropriate Practice in the Early Childhood Classroom

1. A sub-sample of 20 teachers who returned questionnaires was randomly selected for classroom observation.
2. Principals of those teachers were contacted by telephone to explain the procedure for this part of the study and request permission to observe.
3. Selected teachers were mailed an informed consent letter (see Appendix K).
4. Site observation appointment contacts were made by the observer two weeks before the actual visit, followed by a confirmation call a day or two before the visit.
5. Each classroom was visited on two occasions for a 2-3 hour period each within a 2-week period during April of 1992. After their first visit to each program the observers were asked to complete a tentative version of the Checklist, and then to complete the final rating form after the end of their last visit. This helped observers identify items which might have been overlooked

during the first visit, or about which observers were initially uncertain.

The observation form allowed room for examples or explanatory comments under each item. At the end of each observation, any item which was not rated due to lack of information was presented as an open-ended clarification question in an interview with the teacher. The questions regarding parent involvement and evaluation were also asked at this time.

6. As an incentive to grant permission for observation in their classrooms, teachers received a gift certificate to a bookstore or a teacher-supply outlet.

Observer Training

1. Observers were chosen from undergraduate students in early childhood and elementary education who had taken a course taught by the researcher entitled Developmental Educational Psychology. During this course, students received training in methods and procedures in observation, recording skills, and maintaining confidentiality. Course requirements included several observations in elementary schools. The researcher selected three students who had demonstrated outstanding performance in this course to be trained as observers.

2. The team of three observers was trained over a 3-week period to conduct the classroom observations. The first training session was led by the investigator to acquaint observers with the instrument and the procedures of the study. Observers read and discussed the sections on primary grades in the NAEYC Guildelines with the researcher. Each item on the Checklist was discussed, clarifying item descriptors and referring back to a section of the NAEYC Guidelines when needed.

3. The second and third training sessions were devoted to practice in the use of the Checklist. Observers conducted pilot observations at a college laboratory preschool/ kindergarten classroom to practice and establish interobserver reliability. The master teacher in this classroom was observed simultaneously by the three observers who independently rated each of the Checklist practices observed. The first practice observation was devoted to achieving a high level of understanding and agreement on the item descriptors and rating of the practices observed. By consensus, some item descriptors were added to the observation form to make each end of the rating continuum more distinct and mutually exclusive. In order to come to consensus in the meaning and scoring of the interview questions, the investigator acted as "teacher," role-playing various

responses to the questions. These responses were then rated by the observers.

During the second practice observation, observers independently rated the classroom practice without conferring with one another or the researcher. The master teacher was interviewed by one of the observers, and her responses were independently rated by all three observers. Inter-rater reliability statistics reported earlier in this chapter were figured based upon this final practice observation.

4. After the sample of 20 randomly selected teachers was chosen, observers were assigned to observe teachers based on geographical proximity and time availability. Observers A and B rated seven teachers each and observer C rated six teachers.

5. When doing classroom observations, observers were blind as to the results of the teacher questionnaire.

CHAPTER 4

RESULTS

This was a descriptive study examining the classroom practices of first and second grade teachers and the espoused beliefs of primary teachers, principals, and teacher educators concerning developmentally appropriate curriculum and instructional methods in the primary grades. The study also examined differences in level of developmentally appropriate beliefs and practices between teachers certified in early childhood education and those certified in elementary education.

This chapter is a description of the statistical analyses and the findings. The chapter begins with a description of the demographic data. The following four sections describe the results according to the research questions. The first section examines (a) the extent to which educator beliefs are consistent with NAEYC guidelines, (b) differences in beliefs of teachers, principals, and teacher educators, and (c) the relationship between developmentally appropriate and inappropriate beliefs. The second section examines (a) the extent to which the classroom practices of primary teachers are consistent with NAEYC guidelines and (b) the relationship between appropriate practice and

inappropriate practice. The third section examines the congruence between teacher beliefs and their teaching behavior. The fourth section examines the degree of developmentally appropriate practice as a function of early childhood or elementary certification.

Demographic Data

Primary Teachers

The sample response rate of 142 is 67% of the 211 first and second grade teachers sampled. These teachers represented 32 urban and suburban public schools in a large metropolitan area.

In the final sample, 72 (50.7%) of the teachers had bachelor's degrees as the highest degree earned; 69 (48.6%) had master's degrees (see Table 4.1).

Table 4.1

Highest Degree Earned-Primary Teachers

Degree	n	%
Bachelor's	72	50.7
Master's	69	48.6
Doctorate	0	
Missing	1	.7
Total	<u>142</u>	<u>100.0</u>

One teacher (.7%) reported teacher certification with endorsement in early childhood, 24 (16.9%) with endorsement in early childhood and elementary, 102 (71.8%) had certification with elementary endorsement only, 14 (9.9%) reported teacher certification with elementary and special education, and one teacher (.7%) reported secondary certification (see Table 4.2).

Table 4.2

Teacher Certification Endorsement

Endorsement	<u>n</u>	<u>%</u>
Early childhood	1	.7
Early childhood special education	0	
Early childhood and elementary	24	16.9
Elementary only	102	71.8
Elementary and special education	14	9.9
Other	1	.7
Total	<u>142</u>	<u>100.0</u>

The number of years of teaching experience ranged from 1 to 31. The mean number of years of teaching

experience at the primary level was 9.6 years (see Table 4.3).

Table 4.3

Years of Teaching Experience

Level	n	Mean Number of Years of Experience
First or second grade	137	9.6
Third, fourth, or fifth grade	73	4.9
Secondary	2	2.5

Principals

All 32 principals returned questionnaires regarding their beliefs about practice in the primary grades.

Twenty four (75%) of the principals had master's degrees as the highest degree earned; seven (21.9%) had doctorate degrees (see Table 4.4).

Table 4.4

Highest Degree Earned--Principals

Degree	n	%
Bachelor's	0	
Master's	24	75.0
Doctorate	7	21.9
Missing	1	3.1
Total	<u>32</u>	<u>100.0</u>

All 32 principals had Type D certification. When asked to indicate previous or other certification, one principal (3.1%) reported certification in early childhood, three (9.4%) had both early childhood and elementary certification, 21 had elementary only (65.6%), and one reported elementary and special education (3.1%) (see Table 4.5).

Table 4.5

Principal Certification Endorsement Other Than Type D

Endorsement	n	%
Early childhood	1	3.1
Early childhood special education	0	
Early childhood and elementary education	3	9.4
Elementary only	21	65.6
Elementary and special education	1	3.1
Other	6	18.8
Total	32	100.0

Note. All 32 principals had Type D Administrator Certification. Other category included Elementary and secondary, Secondary, Superintendent, or failed to indicate certification other than Type D.

Teacher Educators

Of the 65 belief scales sent to faculty members in early childhood and elementary education programs in the state of Colorado, 45 questionnaires were returned, a response rate of 69%.

Ten of the teacher educators held master's degrees as the highest degree earned (22.2%); 34 had doctorate degrees (75.6%) (see Table 4.6).

Table 4.6

Highest Degree Earned--Teacher Educators

Degree	n	%
Bachelor's	0	
Master's	10	22.2
Doctorate	34	75.6
Missing	1	2.2
Total	45	100.0

When asked to indicate the type of education program at which they were a faculty member, 10 indicated their program included early childhood and elementary certification (22.2%) and 34 (75.6%) indicated they were involved in elementary certification (see Table 4.7).

Table 4.7

Type of Education Program at Which Teacher Educator Is a Faculty Member

Program	<u>n</u>	<u>%</u>
Early childhood and elementary	10	22.2
Elementary	32	75.6
Missing	1	2.2
Total	45	100.0

Note. Early childhood and elementary category includes early childhood special education (2 cases). Elementary category includes elementary and middle school (1 case) and elementary and secondary (5 cases).

In the following sections, data were analyzed and reported according to the research questions.

Espoused Beliefs

1. To what extent are the espoused beliefs of primary teachers, principals, and teacher educators consistent with the NAEYC guidelines for developmentally appropriate practice for 6 to 8 year olds?

Data from the Teacher Beliefs Scale, Principal Beliefs Scale, and Teacher Educator Beliefs Scale were analyzed according to the mean scores by which educators

rated the degree of importance of each belief item and according to total scale means.

Individual Items from Beliefs Scale

Belief scale items were rated on a 5-point Likert scale from not important at all to extremely important. The combined mean scores for teachers, principals, and teacher educators ratings of the importance of each separate belief item are reported in Appendix L.

According to the design of the instrument, ratings 3.0 and below for appropriate belief items and 3.0 and above for inappropriate belief items are considered to be developmentally inappropriate and inconsistent with the guidelines devised by NAEYC. Using these standards, the degree of importance attributed by all three groups of educators was consistent with NAEYC guidelines for 33 belief items relating to integrated curriculum, child-initiated activity, hands-on exploration of concrete materials, social interaction, responsiveness to individual differences, guidance of social-emotional development, motivation, input from parents, and evaluation techniques.

The degree of importance attributed by educators to the following belief items was inconsistent with NAEYC guidelines: (a) importance of children forming letters correctly on a printed line (teachers only), (b)

importance of 6 year olds learning to read (teachers and principals), and (c) importance of planned activities for outdoor time (teachers, principals, and teacher educators). (See Appendix L.)

Total Scale Means

To figure total scale means, scoring of items related to inappropriate practice was reversed so that high scores indicate more appropriate beliefs (see section on Instrumentation in chapter three). Thus a mean value of 1 represents consistently inappropriate beliefs and a mean value of 5 represents highly appropriate beliefs.

Mean Beliefs Scale scores for each group were more appropriate than inappropriate. Mean scores for primary teachers ranged from 2.67 to 4.97 with a group mean of 3.97. Mean scores for principals ranged from 3.31 to 4.67 with a group mean of 4.17. For teacher educators, the range was from 3.44 to 4.81 with a group mean of 4.19. Overall, educators studied in this sample do espouse beliefs which are appropriate and consistent with the NAEYC guidelines.

2. Is there a difference in the beliefs of primary teachers, principals, and teacher educators regarding appropriate primary curriculum and instructional practices?

Using total Beliefs Scale means, differences in beliefs between the three groups of educators were investigated with a one-way analysis of variance. Data analysis tested the null hypothesis that there is no significant difference between the beliefs of teachers, principals, and teacher educators.

The analysis of variance revealed statistically significant differences between the three groups of educators ($F = 7.203$, $df = 2;216$, $p = .0009$). Group means and standard deviations are presented in Table 4.8.

Table 4.8

Beliefs Scale Means and Standard Deviations for Educator Groups

Group	Mean	SD
Primary teachers	3.97	.41
Principals	4.17	.32
Teacher educators	4.19	.36

To determine which differences between means were significant, a Scheffe multiple range test was performed. The results of this analysis indicated that the mean scores of Teachers and Principals were significantly

different from each other, as were the Teacher and Teacher Educator groups ($p = .05$). Both Principals and Teacher Educators espoused more developmentally appropriate beliefs than Primary Teachers. The only comparison that failed to reach significance was between Principals and Teacher Educators.

3. What is the relationship between developmentally appropriate and inappropriate beliefs?

Data from the Teacher Beliefs Scale, the Principal Beliefs Scale and the Teacher Educator Beliefs Scale were figured as separate means for items representing appropriate and inappropriate beliefs, with a mean value of 1 indicating the respondent rated the item as not important at all and a mean value of 5 indicating the respondent rated the item as extremely important in the primary grades. The relationship between appropriate belief items and inappropriate belief items was investigated with correlational analysis. For each group of educators (teachers, principals, and teacher educators) data analysis tested the null hypothesis that there is no significant relationship between appropriate and inappropriate beliefs. The alternative hypothesis was that appropriate and inappropriate belief items would be negatively correlated.

A Pearson product-moment correlation coefficient was used to determine the degree of correlation between the subscale of items representing appropriate beliefs and the subscale of items representing inappropriate beliefs. Results appear in Table 4.9.

Table 4.9

Pearson Product-Moment Correlation Coefficients for Scores on Appropriate and Inappropriate Beliefs Subscales

Group	n	Correlation Coefficient
Primary teachers	142	-.48***
Principals	32	-.48**
Teacher educators	45	-.38*

* $p = .005$ ** $p = .003$ *** $p = .000$

Correlation coefficients were found to be significant for all three groups of educators and in each case the null hypothesis was rejected. For Primary Teachers, Principals, and Teacher Educators there was a negative correlation between developmentally appropriate and inappropriate beliefs.

Classroom Practices

4. To what extent are primary teachers implementing practices which are consistent with the NAEYC guidelines for developmentally appropriate instructional practices for 6 to 8 year olds?

Individual Items from the Instructional Activities Scale

Self report data from the Instructional Activities Scale were analyzed according to the mean scores rating the frequency of each activity as reported by the primary teachers. Teachers rated the frequency of availability of each activity in his/her classroom along a 5-point scale from almost never (less than monthly) to very often (daily). Results are presented in Appendix M.

According to the design of the instrument, ratings 3.0 and below for appropriate instructional activities and 3.0 or above for inappropriate activity items are considered to be developmentally inappropriate and inconsistent with guidelines devised by NAEYC. Using these standards, the frequency with which teachers implemented 25 out of 33 instructional/classroom activities was consistent with the NAEYC guidelines.

Within the 25 instructional activities that were consistent with the NAEYC guidelines, developmentally appropriate practices which occurred once a week or more included: (a) children selecting centers, (b) listening to stories read by teacher, (c) doing creative writing,

(d) playing with games, puzzles, and manipulatives, (e) singing or listening to music, (f) social reinforcement, (g) children working together on activities, and (h) math incorporated with other subject areas (see Appendix M). Developmentally inappropriate activities which were reported as occurring less than weekly included: (a) using flashcards, (b) coloring and/or cutting predrawn forms, (c) losing special privileges, (d) using isolation, and (e) competitive math activities (see Appendix M).

However, the frequency with which teachers implemented several instructional activities was inconsistent with the NAEYC guidelines. Developmentally appropriate activities which were offered less frequently than desirable according to the guidelines (less than weekly) were: (a) dictate stories to teacher, (b) participating in dramatic play, (c) games/activities directed by or made by parents, (d) specifically planned outdoor activities, and (e) health and safety activities. Developmentally inappropriate activities which were offered more frequently than desirable according to the guidelines (once a week or more) were: (a) practicing handwriting on lines, (b) large group teacher directed instruction, and (c) tangible rewards for appropriate behavior and/or performance (see Appendix M).

Total Scale Means

Self report data from the Instructional Activities Scale and observer ratings from the Checklist for Rating Developmentally Appropriate Practice in the Early Childhood Classroom were figured as total scale means. Scoring of items representing inappropriate practice on the IAS was reversed, so that a mean value of 1 represented consistently inappropriate practice and a mean value of 5 represented highly appropriate practice. The 142 survey responses by primary teachers (IAS) yielded a range for the total scale of 2.52 to 4.55, with a mean of 3.48 (SD .42). The 20 observations (Checklist) yielded a range for the total scale of 2.42 to 4.33, with a mean of 3.64 (SD .53). Overall, primary teachers reported implementing and were observed to implement instructional practices which were more appropriate than inappropriate according to the NAEYC guidelines.

5. What is the relationship between appropriate classroom instructional practice and inappropriate instructional practice?

Data from the Instructional Activities Scale were analyzed by separate mean scores for the items reflecting inappropriate practice and those reflecting appropriate practice, with a mean value of 1 indicating the respondent rated the activity as being implemented less than monthly and a mean value of 5 indicating that the

respondent rated the activity as being implemented daily. The relationship between these means was investigated with correlational analysis to test the null hypothesis that there is no significant relationship between appropriate practice and inappropriate practice items. The alternative hypothesis was that appropriate practice and inappropriate practice would be negatively correlated.

For the 142 primary teachers, a Pearson product-moment correlation coefficient was used to determine the degree of correlation between these two sets of data. For the two subscales, the appropriate and inappropriate instructional practice items were found to be negatively correlated ($r = -.21$, $p = .005$), thus the null hypothesis was rejected.

Congruence of Beliefs and Teaching Behavior

6. What is the congruence between the beliefs of primary teachers and their teaching behavior in the classroom?

For the 20 teachers who were observed, relationships among variables were evaluated with Pearson correlations comparing mean scores on the Teacher Beliefs Scale with the scores on the Instructional Activities Scale and the Checklist for Rating Developmentally Appropriate Practice. Results are reported in Table 4.10.

Table 4.10

Intercorrelations Between Scores on the Teacher Beliefs Scale (TBS), Instructional Activities Scale (IAS), and Checklist for Rating Developmentally Appropriate Practice (Checklist)

	TBS	IAS	Checklist
TBS	--	.7685**	.6981**
IAS	--	--	.5402*

*p = .014 **p = .001

Data analysis tested the null hypothesis that there is no significant relationship between the developmental appropriateness of the beliefs of primary teachers and the developmental appropriateness of their teaching behaviors in the classroom.

All correlation coefficients were found to be significant and the null hypothesis was rejected. A positive correlation was found between the developmental appropriateness of the beliefs of primary teachers and the developmental appropriateness of their teaching behavior in the classroom.

Overall, teachers who espoused more developmentally appropriate beliefs on the TBS reported implementing more developmentally appropriate instructional activities on

the IAS and were rated as demonstrating more developmentally appropriate activities by observers.

For those 21 items on the Teacher Beliefs Scale for which there was a matching item on the Instructional Activities Scale, paired t-tests were used to investigate the differences between beliefs and teaching behaviors. Cross-tabulation investigated differences in scatter. Data analysis tested the null hypothesis that there is no significant difference between beliefs of primary teachers and their practices in the classroom.

Table 4.11 pairs matching items on the Teacher Beliefs Scale and Instructional Activities Scale according to item number.

For the 21 pairwise comparisons, the calculated t-value was significant in 15 cases (see Table 4.12). The following developmentally appropriate classroom activities occurred less frequently than was expected based on teachers' rating of importance to the primary grades: (a) exploration of various art media (drawing, painting, playdough, etc.), (b) exploring animals, plants, scientific equipment (active exploration of concrete materials), (c) doing creative writing, (d) children dictating stories to the teacher, (e) children participating in dramatic play, (f) children conversing

privately with teacher, (g) health and safety activities,
and (h) multicultural and nonsexist activities.

Table 4.11

Matching Items on Teacher Beliefs Scale (TBS) and
Instructional Activities Scale (IAS)

<u>Item Description</u>	<u>TBS Item Number</u>	<u>IAS Item Number</u>
Select own activities/areas	5	2
Explores various art media	6	31
Works silently, alone on seatwork	8	11
Exploration of concrete materials	11	9
Interactions with other children	12	23
Workbooks/dittos	10	11
Flashcards	13	7
Whole group instruction/same activity	33	22
Authority/extrinsic tangible rewards	17	24
Authority/punishment and reprimand	22	25
Color within lines	20	16
Practice handwriting on lines	28	18
Read stories to children	24	5
Children dictate stories	25	1
Dramatic play	27	3
Talk informally with adults	29	19
Inventive spelling	23	6
Math incorporated with other subjects	32	32
Health and safety	15	30
Multicultural/nonsexist	34	27
Planned outdoor activities	35	28

Table 4.12

Calculated t-Statistic and Corresponding p Level for
Beliefs/Practice Comparisons

Belief/Activity Item Description	t-value	df	p
Select own activities/areas	-1.27	140	.206
Explores various art media	7.51	140	.000*+
Works silently, alone on seatwork	3.52	140	.001*+
Exploration of concrete materials	12.98	141	.000*+
Interactions with other children	.91	139	.363
Workbooks/dittos	4.89	140	.000*+
Flashcards	-3.86	139	.000*
Whole group instruction/same activity	16.51	140	.000*+
Authority/extrinsic tangible rewards	9.74	139	.000*+
Authority/punishment and reprimand	3.81	139	.000*+
Color within lines	4.19	139	.000*+
Practice handwriting on lines	2.54	139	.012
Read stories to children	-.65	141	.515
Children dictate stories	12.26	138	.000*+
Dramatic play	19.49	140	.000*+
Talk informally with adults	2.89	141	.005*+
Inventive spelling	-3.70	139	.000*
Math incorporated with other subjects	-.68	141	.496
Health and safety	13.17	140	.000*+

Multicultural/nonsexist	9.58	138	.000*+
Planned outdoor activities	-.91	137	.366

* $p = .005$ or less

Note. + Indicates cases wherein teachers' beliefs tend to be more developmentally appropriate than their classroom activities.

The following developmentally inappropriate classroom activities occurred more frequently than was expected based on teachers' rating of importance to the primary grades: (a) circling, underlining, and/or marking items on worksheets, (b) using flashcards, (c) large group teacher directed instruction, (d) tangible rewards for appropriate behavior and/or performance, (e) losing special privileges (trips, recess, free time, parties, etc.) for misbehavior, and (f) coloring and/or cutting predrawn forms. In those cases, the null hypothesis was rejected and it was found that there is a significant difference between the beliefs of primary teachers and their teaching behaviors in the classroom.

An examination of the scatter plots indicates that in 13 out of the 15 cases for which there was a difference between beliefs and practices, teachers' beliefs tend to be more developmentally appropriate than their classroom activities (see Table 4.5). For example, although most teachers rated dramatic play as "very important" in the primary grades, most teachers presented an opportunity for children to engage in dramatic play only "rarely" (monthly) or "sometimes" (weekly).

Overall, primary teachers who espoused more developmentally appropriate beliefs implemented more developmentally appropriate activities. However, there

were differences between specific beliefs regarding the importance of certain instructional activities and the frequency with which teachers implemented these activities.

Degree of Developmentally Appropriate Practice as a Function of Early Childhood or Elementary Certification

7. Is there a difference in the level of developmentally appropriate beliefs and practices between those primary teachers with certification in early childhood education and those primary teachers with elementary education certification only?

Teachers were divided according to information provided on the cover sheet of the questionnaire regarding background as to level of certification.

Differences in level of developmentally appropriate beliefs and practices as a function of certification level were analyzed with multivariate analyses of variance. Data analysis tested the null hypothesis that there is no significant difference between those teachers with certification in early childhood education and those teachers with elementary certification only in the level of their developmentally appropriate beliefs and practices.

The multivariate test for a main effect by certification level was significant ($F = 3.16$, $df = 2;139$, $p = .045$). The univariate F test for this main

effect indicates that there was a significant difference in scores on the IAS but not on the TBS based on certification level ($F = 5.63$, $df = 1;140$, $p = .05$).

Although there was no difference in the developmental appropriateness of their beliefs about curriculum and instructional practices, teachers with early childhood certification tended to indicate that they offer more developmentally appropriate activities (IAS) than teachers with elementary certification only.

CHAPTER 5

SUMMARY AND INTERPRETATION

This chapter begins by reviewing the background and purpose of the study. The research questions are restated and the research design is summarized. The findings are then discussed as they relate to the research questions and as they compare to the findings presented in the literature review. Next, the implications for educational practice and policy and suggestions for future research are presented. The theoretical model for interpreting the research on teacher beliefs and behavior which underlies this study is integrated throughout the discussion of findings and implications.

Summary of the Study

Background

Early education today is influenced by two dominant educational philosophical and psychological perspectives: the behavioristic-learning theory perspective based on the work of Skinner, and the developmental perspective, incorporating the work of Piaget and Dewey (Seefeldt, 1976). The behaviorist perspective currently dominates the curricula of the public schools as demonstrated by

academic, teacher-directed large-group instruction, careful sequencing of skills, systematic use of reinforcement, use of workbooks, and much drill and practice. According to many early experts in early childhood education, this perspective, along with a recent emphasis on "back to basics" and improved standardized test scores, results in many elementary schools narrowing the curriculum and adopting instructional approaches that are incompatible with current knowledge about how young children learn and develop (Bredekamp, 1987, p. 62).

Experts in early childhood education advocate a developmental-interactive perspective as appropriate for children 6 through 8 years of age, reflected in a child-centered integrated curriculum designed to develop skills in all developmental areas through active involvement with other children, adults, and materials in the environment. Teachers guide children's learning experiences by extending children's ideas, responding to their questions, engaging them in conversation, making suggestions, and encouraging and challenging their thinking (Bredekamp, 1987; NAEYC, 1988).

Purpose

This was a descriptive study designed to examine the classroom practices of first and second grade teachers and the espoused beliefs of primary teachers, principals, and teacher educators concerning developmentally appropriate curriculum and instructional methods in the primary grades.

The purpose of this study was to:

1. Identify the degree to which the beliefs of primary teachers, elementary school principals, and early childhood teacher educators are congruent with the NAEYC guidelines for appropriate/inappropriate curriculum and instructional practices for 6 to 8 year olds.
2. Identify the degree to which primary teachers' practices are congruent with the NAEYC guidelines for appropriate/ inappropriate instructional practices for 6 to 8 year olds.
3. Compare the congruence between the beliefs of primary teachers and their teaching behavior in the classroom.
4. Compare the level of developmentally appropriate practice between those primary teachers with a certification in early childhood education and those primary teachers with elementary certification.

Sample

Subjects were selected from a sample of first and second grade teachers in public schools in Denver and three surrounding counties (Adams, Arapahoe, and Douglas). Twelve urban and 20 suburban schools were selected through random sampling, resulting in a final sample pool of 211 primary teachers. Self-administered questionnaires were mailed to the principal and each first and second grade teacher in the selected schools. Questionnaires were returned by all 32 of the principals and by 142 of the teachers. From this group, a subsample of 20 primary teachers was randomly selected for classroom observation.

Teacher educators were selected from faculty members in teacher education certification programs approved by the Colorado State Department of Education. Questionnaires were sent to 65 faculty members at the early childhood or elementary education level. Questionnaires were returned by 45 of these faculty members.

Research Questions and Methods

Data were analyzed according to the research questions.

1. To what extent are the espoused beliefs of primary teachers, principals, and teacher educators

consistent with the NAEYC guidelines for developmentally appropriate practice for 6 to 8 year olds?

Data were collected by administering the Teacher Beliefs Scale to first and second grade teachers, a corresponding version entitled Principal Beliefs Scale to principals of elementary schools, and an Educator Beliefs Scale to faculty members of early childhood and elementary education programs. The items included represent eight areas of primary instruction as specified in the NAEYC guidelines (Bredekamp, 1987): curriculum goals, teaching strategies, integrated curriculum, guidance of social-emotional development, motivation, parent-teacher relations, evaluation, and transitions.

Each TBS item is a statement (e.g. It is important for children to learn through active exploration.) that the respondent rates on a 5-point Likert scale from not important at all to extremely important.

Data were computed as total scale means. Beliefs Scale means above 3.0 were considered to be more developmentally appropriate than inappropriate and thus consistent with NAEYC guidelines.

2. Is there a difference in the beliefs of primary teachers, principals, and teacher educators regarding appropriate primary curriculum and instructional practices?

Data were computed as total scale means. Differences in beliefs between the three groups of educators were investigated with a one-way analysis of

variance. Data analysis tested the null hypothesis that there is no significant difference between the beliefs of teachers, principals, and teacher educators.

3. What is the relationship between developmentally appropriate and inappropriate beliefs?

Comparing means on the inappropriate belief items and means on the appropriate belief items of the Teacher Beliefs Scale, a correlational analysis was used to test the null hypothesis that there is no significant relationship between appropriate and inappropriate beliefs.

4. To what extent are primary teachers implementing practices which are consistent with the NAEYC guidelines for developmentally appropriate instructional practices for 6 to 8 year olds?

Data were collected through a self-report questionnaire administered to all first and second grade teachers (the Instructional Activities Scale) and through observation of a subsample of twenty primary teachers using the Checklist for Rating Developmentally Appropriate Practice in the Early Childhood Classroom.

IAS items describe an activity (e.g. playing with games and puzzles; using flashcards with sight words and/or math facts). The respondent rates the frequency of availability of each activity in his/her classroom along a 5-point scale from almost never (less than monthly) to very often (daily).

The Checklist is a 24-item observational instrument developed to determine the accuracy of individual teacher's questionnaire responses (Charlesworth, Mosley, Burts, Hart, Kirk, & Hernandez, in press). Items were constructed corresponding to the NAEYC guidelines for children ages 5-to-8 (Bredekamp, 1987). Areas included were curriculum goals, teaching strategies, integrated curriculum, guidance of social-emotional development, motivation, and transitions. An attached interview includes three questions related to parent-teacher relations and evaluation and provides open-ended clarification questions for any of the observation items which could not be rated due to lack of information.

Each item in the observation instrument was rated by observers on a 5-point Likert Scale, the most appropriate practice descriptors are listed under point 5 and the most inappropriate under point 1.

Data for the Instructional Activities Scale were analyzed according to the mean scores which indicate the self-reported availability of each classroom activity. Data from the Instructional Activities Scale and the Checklist for Rating Developmentally Appropriate Practice were reported as mean scores, with mean values of 1 representing highly inappropriate practice and mean values of 5 representing highly appropriate practice;

means above 3.0 were considered to be more developmentally appropriate than inappropriate and thus consistent with NAEYC guidelines.

5. What is the relationship between appropriate classroom instructional practice and inappropriate instructional practice?

The relationship between appropriate practice items and inappropriate practice items on the Instructional Activities Scale was investigated with correlational analysis to test the null hypothesis that there is no significant relationship between appropriate and inappropriate instructional practice items.

6. What is the congruence between the beliefs of primary teachers and their teaching behavior in the classroom?

Data analysis tested the null hypothesis that there is no significant relationship between teacher beliefs and classroom teaching behavior. Relationships among the variables were evaluated with Pearson correlations comparing mean scores on the Teacher Beliefs Scale with those on the Instructional Activities Scale and the Checklist for Rating Developmentally Appropriate Practice. A dependent t-test was used to investigate differences between beliefs and behaviors on the TBS and IAS.

7. Is there a difference in the level of developmentally appropriate beliefs and practices between those primary teachers with certification in early

childhood education and those primary teachers with elementary education certification only?

Teachers were divided according to information provided on the cover sheet of the questionnaire regarding background as to level of certification.

Differences in level of developmentally appropriate beliefs and practices as a function of certification level were analyzed with multivariate analyses of variance. Data analysis tested the null hypothesis that there is no significant difference between those teachers with certification in early childhood education and those teachers with elementary certification only in the level of their developmentally appropriate beliefs and practices.

Summary and Discussion of the Findings

Findings are summarized and discussed according to the research questions.

1. To what extent are the espoused beliefs of primary teachers, principals, and teacher educators consistent with the NAEYC guidelines for developmentally appropriate practice for 6-8 year olds?

The Beliefs Scale means for each group of educators were more appropriate than inappropriate. Overall, the educators studied in this sample espoused beliefs which were appropriate and consistent with NAEYC guidelines: they placed a high degree of importance upon direct

experience, child-initiated activity, responsive adults, and social interaction in the primary grades.

Only three belief items out of 36 had mean scores which were inconsistent with NAEYC guidelines: (a) importance of children forming letters correctly on a printed line (teachers only), (b) importance of 6 year olds learning to read (teachers and principals), and (c) importance of planned activities for outdoor time (teachers, principals, and teacher educators). Items (a) and (b) above could be interpreted as an expectation that all children achieve certain academic skills by the same predetermined chronological age rather than respecting each child as a unique person with an individual pattern of growth and allowing children to move at their own pace in acquiring skills. Such expectations violate the concept of developmentally appropriate practice which is based upon knowledge of the typical development of children within a certain age span (age appropriateness) as well as the uniqueness of the individual (individual appropriateness).

Perhaps the importance attributed to 6 year olds learning to read and form letters correctly on a line is reflective of the pressure of parental expectations mentioned by other researchers as an influence on beliefs and practices (Duffy, 1981; Hatch & Freeman, 1988b; Hoot

et al., 1989). However, it should be noted that several teachers and principals wrote in "at their own level" next to the item "It is (_____) for 6 year olds to learn to read," which could suggest a recognition of the developmental stages of reading (emergent, early, fluent) as "learning to read" and therefore important for all 6 year olds.

It is interesting to note that all three groups of educators devalued the importance of planned activities for outdoor time. According to the NAEYC position statement, outdoor activities should be planned daily so that children can develop large muscle skills, learn about outdoor environments, and express themselves freely. Outdoor time is viewed as an integral part of the curriculum which requires planning, not as simply recess or a time for children to release pent-up energy (Bredekamp, 1987).

Perhaps educators view planned outdoor activity as out of their realm, belonging more under the domain of the physical education teacher. Viewing outdoor activity as recess or not part of a teacher's responsibility violates the NAEYC definition of developmentally appropriate curriculum as providing for all areas of a child's development and dismisses the premise that

development in one domain influences and is influenced by development in other domains.

Two beliefs for which the mean scores were near 3.0 could be of concern: (a) the importance of instruction in recognizing single letters of the alphabet and phonics, isolated from words and (b) the importance of flashcards (numbers, letters, and/or words). Mean scores near 3.0 indicate that for many teachers, the degree of importance attributed to these items was inappropriately high according to the NAEYC guidelines. Both of these belief items represent what Leu and Kinzer (1987) called a "mastery of specific skills/textbased" orientation to reading. Most early childhood educators favor more of a "holistic/reader-based" orientation reflecting the belief that reading ability develops through meaningful, functional, and holistic experiences with print wherein technical skills or subskills are taught as needed to accomplish the larger goals of communication through reading and writing, not as the goal itself.

2. Is there a difference in the beliefs of primary teachers, principals, and teacher educators regarding appropriate primary curriculum and instructional practices?

Both principals and teacher educators were found to espouse more developmentally appropriate beliefs than primary teachers. This finding could be interpreted as

the result of "practice shaping beliefs," an explanation which is supported by several studies. Regan and Weininger (1988) suggest that teachers' assumptions regarding how children learn and their educational values are continually influenced by teaching experiences. Sigel (1985) contends that the source of beliefs is personal experience; individuals may adopt beliefs because they have been useful in their personal experience. Spodek (1988) discusses "implicit theories" about child development and instruction that teachers develop from their personal experience which differ from explicit theories taught in education and child development courses. Thus, the more developmentally appropriate beliefs of principals and teacher educators may be based more upon explicit developmental theory, whereas the beliefs of teachers are influenced over time by their personal experiences and the realities of daily classroom life.

3. What is the relationship between developmentally appropriate and inappropriate beliefs?

For primary teachers, principals, and teacher educators, there was a negative correlation between developmentally appropriate and inappropriate beliefs. This finding provides support for the content validity of the Beliefs Scale.

4. To what extent are primary teachers implementing practices which are consistent with the NAEYC guidelines?

Overall, primary teachers reported implementing and were observed to implement instructional practices which were more appropriate than inappropriate according to the NAEYC guidelines. The data indicate that the primary teachers in this sample utilize many instructional activities reflective of a developmental-interactive perspective as demonstrated by the frequency of developmentally appropriate practices in their classrooms: (a) children selecting centers, (b) listening to stories read by teacher, (c) doing creative writing, (d) playing with games, puzzles, and manipulatives, (e) singing or listening to music, (f) social reinforcement, (g) children working together on activities, and (h) math incorporated with other subject areas. However, some caution must be used in interpretation of the data based on teacher self report regarding the frequency of the availability of activities. Charlesworth et al. (1990) noted that in some kindergarten classrooms teachers may make appropriate activities available each day but limit access to students who have finished a considerable amount of workbook activities first, or teachers may use appropriate materials but in large groups wherein the children must wait for everyone to complete a task before moving on to the next. They go so far as to suggest that

teachers' responses to the inappropriate items may better indicate what is really going on in their classrooms.

In the present study, only three developmentally inappropriate activities were offered more frequently than desirable according to the guidelines (once a week or more): (a) practice handwriting on lines, (b) large-group teacher directed instruction, and (c) tangible rewards for appropriate behavior and/or performance. However, it is important to note instructional activities for which the mean scores were nearly at the level considered undesirable: (a) children reading in ability groups, (b) use of worksheets, and (c) copying from the chalkboard. Taken together, the frequency of these developmentally inappropriate activities suggests the influence of the behaviorist perspective which dominates much of the curricula of public schools (academic, teacher-directed large-group instruction, careful sequencing of skills, systematic use of reinforcement, use of workbooks and much drill and practice), even for teachers who attempt to implement a developmental-interactive approach overall. The explanation for this may be found in previous work which noted that teachers perceived use of workbooks and direct instruction approaches as more efficient ways to teach basic skills (Hitz, 1986; Kagan & Smith, 1988) and teacher uncertainty

of how to translate a developmental approach into teaching practices meeting certain district objectives (Hitz, 1986).

Developmentally appropriate activities which were offered less frequently than desirable according to the guidelines (less than weekly) were: (a) children dictate stories to the teachers, (b) participation in dramatic play, (c) games/activities directed or made by parents, (d) specifically planned outdoor activities, and (e) health and safety activities. The relative infrequency of children dictating stories, participation in dramatic play, and health and safety activities may be attributed to a lack of time (several teachers wrote in "not enough time" next to these items) or insufficient respect for instruction that is cognizant of "the whole child." The relative infrequent use of games/activities directed or made by parents could indicate insufficient regard for parents as partners in the educational process. In addition to the reasons previously speculated with regards to teachers' beliefs about the importance of planning for outdoor activities, the researcher has observed teachers using outdoor time as a "break" during which they may supervise but not actively engage in interaction with the children.

5. What is the relationship between appropriate classroom instructional practice and inappropriate instructional practice?

Appropriate and inappropriate instructional practice items were found to be negatively correlated. This finding provides support for the content validity of the Instructional Activities Scale.

6. What is the congruence between the beliefs of primary teachers and their teaching behavior in the classroom?

A positive correlation was found between the developmental appropriateness of the beliefs of primary teachers and the developmental appropriateness of their teaching behavior in the classroom. Overall, teachers who espoused more developmentally appropriate beliefs on the TBS reported implementing more developmentally appropriate instructional activities on the IAS and were rated as demonstrating more developmentally appropriate activities by observers.

However, there were differences between specific beliefs regarding the importance of certain instructional activities and the frequency with which teachers implemented these activities. In 87% of the cases for which there was a difference between beliefs and practices, teachers' beliefs tended to be more developmentally appropriate than their classroom activities.

A similar finding was reported in two related studies on kindergarten, where researchers found educators implementing academically oriented practices in the kindergarten while espousing more developmentally oriented beliefs (Hatch & Freeman, 1988a; Hitz, 1986). Hatch and Freeman called this a philosophy-reality conflict--a conflict between their espoused beliefs about what is appropriate to facilitate learning in young children and their implementation of behaviorist classroom practices.

Using the terms of the model proposed by Argyris and Schon (1974), the primary teachers in the current study demonstrated a lack of congruence between their espoused theory and their theories-in-use. One's espoused theory is that to which one gives allegiance and communicates to others. The theory that actually governs one's actions is one's theory-in-use, which may or may not be compatible with one's espoused theory. Congruence exists when one's espoused theory matches the theory-in-use, that is, one's behavior fits their espoused theory of action.

Although determining the reasons for the lack of congruence between teacher beliefs and teacher practice is beyond the scope of the present study, previous research suggests that the reasons for such incongruence

include influences upon the teacher by external environmental factors and influences within the teacher.

The external environmental influences include (a) expectations of principals, other teachers, parents, and the general public (Duffy, 1981; Hatch & Freeman, 1988b; Hoot et al., 1989; Hyson, Hirsh-Pasek, & Rescorla, 1989; Moyer, 1986; Shepard & Smith, 1985, 1988); (b) accountability mandates from the district and state requiring measurement of student achievement (Bredekamp & Shepard, 1989; Duffy, 1981; Hatch & Freeman, 1988b; Hoot et al., 1989; Shepard & Smith, 1988); (c) published materials such as basal textbooks and curriculum guides (Duffy, 1981; Duffy & Anderson, 1984; Hatch & Freeman, 1988b; Hoot et al., 1989; Kamii, 1985; Mayer, 1985); (d) student characteristics (Duffy, 1981; Duffy & Anderson, 1984; Hatch & Freeman, 1988b; Mayer, 1985; Shepard & Smith, 1985); and (e) working conditions such as material shortages (Gonzalez-Vargas, 1984) and shortage of time (Hitz, 1986).

The influences within the teacher include: (a) teacher's actions based upon personal values and experiences rather than theory (Spodek, 1988); (b) teacher's actions influenced by conflicting values and beliefs (Berlak, Berlak, Bagantos, & Midel, 1975; Pearson, 1985); and (c) teachers' uncertainty of how to

translate beliefs into practice or link psychological theories to educational practice (Hitz, 1986; Kamii, 1985; Regan & Weininger, 1988; Seaver & Cartwright, 1977).

7. Is there a difference in the level of developmentally appropriate beliefs and practices between those primary teachers with certification in early childhood education and those primary teachers with elementary education certification only?

Although there was no difference in the developmental appropriateness of their beliefs about curriculum and instructional practices, teachers with early childhood certification tended to indicate that they offer more developmentally appropriate activities than teachers with elementary certification only. Apparently, teachers with early childhood certification were able to translate their professional knowledge and beliefs regarding growth, development, and learning into more developmentally appropriate instructional practices. This finding supports the recommendation of the Association of Teacher Educators and NAEYC for the establishment of specialized early childhood teacher certification standards for teachers in programs serving children from birth through 8 years of age which are separate from existing elementary certification (ATE and NAEYC, 1991).

Implications for Educational Practice and Policy

Four findings of the present study suggest implications for educational practice and policy: (a) while educators studied in this sample espoused beliefs which were appropriate and consistent with NAEYC guidelines overall, teacher educators and principals espoused more developmentally appropriate beliefs than primary teachers, (b) while primary teachers reported implementing and were observed to implement instructional practices reflective of a developmental-interactive perspective overall, the frequency of some developmentally inappropriate activities suggests the influence of the behaviorist perspective which dominates much of the curricula of public schools, (c) when there was an apparent lack of congruence between teacher beliefs and practice, teachers' beliefs tended to be more developmentally appropriate than their classroom activities, and (d) teachers with early childhood certification offered more developmentally appropriate activities than teachers with elementary certification only.

The following three sections discuss the educational practice and policy implications for primary teacher education, the role of the principal, and changes at the school, district, and state level.

Primary Teacher Education

In order to improve the way prospective teachers will ultimately implement practice in their classrooms, teacher education programs must consider the educational beliefs of prospective teachers. The existence of beliefs about education in preservice teachers has been documented by other researchers, and explained as a process of internalizing the modes of practices of their own teachers while they were students (Lortie, 1975) or as a means for interpreting, evaluating, and justifying classroom events (Nespor, 1985). It is necessary, therefore, to assist prospective teachers to become consciously aware of their implicit beliefs, to encourage education students to form their own opinions on educational issues, to present objective data on the adequacy or validity of their beliefs and opinions, and to actively challenge any inappropriate prevailing beliefs.

One can assume that teacher educators endeavor to give preservice teachers a sound understanding of child development and cognitive developmental theory. However, teachers may not be able to derive from theory a coherent framework to guide everyday practice, as suggested by the findings of this study. The challenge to teacher educators is to ensure that teachers are able to

translate developmentally appropriate beliefs into educational goals and teaching practices consistent with the development and abilities of primary grade children.

Teachers should have a sound understanding of principles of child development and learning theory and be able to articulate those beliefs in terms of educational goals. Kaplan-Sanoff (1980) proposes that the goal of teacher education should be to produce graduates who are able to articulate and defend their own beliefs about the teaching-learning process so that their teaching can be purposefully directed towards developing an educational program and goals consistent with the ability and need levels of children. According to Seaver and Cartwright (1977), teacher education programs need to integrate philosophy, theory and practice in such a way as to encourage prospective teachers to develop a rationale for their actions and decisions.

The question remains as to the best method to integrate philosophy, theory, and practice. Spodek (1987) contends that many early childhood educators view the field as a practical application of the scientific field of child development and assume that providing increased knowledge of child development research and theory will improve the work of classroom teachers. However, the results of a study by Spodek indicate that

relatively few of the "theories-in-use" used by teachers were grounded in reliable knowledge of child development. Spodek suggests that the teachers' decisions seem to be based on a form of personal practical knowledge rather than the technical knowledge of child development and learning theory. The importance of practicality was found in other studies which noted that teachers perceived use of workbooks and direct instruction approaches as more efficient ways to teach basic skills (Hitz, 1986; Kagan & Smith, 1988).

In the present study, teacher educators and principals were found to espouse more developmentally appropriate beliefs than primary teachers. It was suggested that the beliefs of teacher educators and principals may be based more upon explicit developmental theory, whereas the beliefs of teachers are influenced over time by their personal experiences and the realities of daily classroom life. In addition, differences were found between beliefs regarding the importance of certain instructional activities and the frequency with which teachers implement these activities. Teachers' beliefs tended to be more developmentally appropriate than their classroom activities. With regard to practice, teachers with early childhood certification offered more developmentally appropriate activities than teachers with

elementary certification. These findings along with previous research cited above suggest important implications for teacher education programs.

1. Teacher education programs need to consider the existing beliefs of prospective teachers and to challenge developmentally inappropriate beliefs by giving preservice teachers objective data regarding child development and learning in the primary years.

2. Teacher education programs need to assist prospective teachers in making the link between theory and practice so that teachers can translate developmental theory into practical everyday teaching practices.

3. Teacher education programs should provide preservice teachers various opportunities to observe efficient and manageable classrooms utilizing a child-centered approach. Observing such classrooms in operation may encourage beginning teachers to resist the perceived efficiency of the use of workbooks and direct instruction approaches as more efficient ways to teach basic skills.

4. Preservice teachers need training and hands-on practice with child-centered instructional practices in order to operationalize their beliefs--to translate child development principles to classroom practice. Methods of teaching in the primary grades that allow for

developmental theory and educational practice to be integrated include the use of learning centers (Gareau & Kennedy, 1991; York, 1977) and the project approach (Katz & Chard, 1989; Webster, 1990).

5. Early childhood teacher certification standards should be established by state boards of education and other certifying agencies to ensure that certified early childhood teachers in programs serving children from birth through the primary grades understand the unique developmental characteristics of young children and the implications for curriculum and instruction. Such certification should be separate from existing elementary and secondary certifications as recommended by the Association of Teacher Educators and the National Association for the Education of Young Children (1991).

Role of the Principal

The findings of this study suggest important implications for the role of the principal.

Elementary principal certification. Principals need to be knowledgeable about developmentally appropriate practice in the primary grades and use their influence in the hiring, supervision, and inservice training of primary teachers in order to promote developmentally appropriate curriculum and instructional methods for the

primary grades. Therefore, elementary principal certification programs should emphasize the development of children ages 6 to 8 and the instructional methods and curriculum appropriate for these ages as opposed to older elementary school children.

Hiring of primary teachers. Knowledge of developmentally appropriate practice for the primary grades rather than other variables such as seniority should take precedence in the selection of primary teachers. Based on the finding that teachers with early childhood certification offered more developmentally appropriate activities than teachers with elementary certification only, principals should strive to hire teachers with early childhood certification for the primary grades.

Identifying teachers' beliefs. In order for the primary curriculum to be developmentally appropriate, the beliefs of first and second grade teachers need to reflect a developmentally appropriate (developmental-interactive) perspective and their classroom behaviors must be consistent with this perspective. Since the belief-behavior relationship has been found to be stronger for teachers whose construct systems are clearly formulated and articulated (Bussis et al., 1976), principals need to assist primary teachers in identifying

their educational beliefs and philosophical foundations. Kaplan-Sanoff (1980) asserts that teachers who can identify their theoretical assumptions and classroom strategies related to child learning are better able to make daily educational decisions based upon a rational and consistent framework of beliefs.

Teacher supervision and inservice training.

Identifying teachers' espoused beliefs should be the first step towards enhancing teacher effectiveness. Principals must then assist teachers in identifying any differences between actual classroom behavior (theories-in-use) and theoretical teaching beliefs (espoused beliefs) and work toward making practices and beliefs more congruent.

Argyris and Schon (1974) point out that this is not an easy task because individuals develop a repertoire of devices by which they avoid recognizing incongruity in their theories-in-use. Principals must facilitate the process of modifying teachers' theories-in-use by encouraging opportunities for self-examination and self-improvement. This could include granting release time for teachers to attend workshops, to read and discuss research, to observe other teachers, and to engage in peer coaching. Principals also need to provide school

time for teachers to share curricular and instructional ideas with one another.

In addition, principals need to be willing to offer in-class support. According to Cogan (1973), it is in the classroom, at the point of application, that new methods of teaching break down (i.e. altering theories-in-use). Teachers need the continuing collaboration of expert supervisors in order to unlearn safe and comfortable ways of teaching and replace them with new developmentally appropriate patterns of behavior.

School, District, and State Level Implications

One of the most critical policy implications is the willingness of districts and states to empower principals and teachers to implement curricular goals, instructional activities, and evaluation methods which are developmentally appropriate for the primary grades. Teachers function more effectively when they are experiencing beliefs-practice congruency. When there is consistency between the theoretical or conceptual foundation and instructional methods, then specific objectives and learning activities can be logically related to the rationale, to the content of the curriculum, and to the evaluation scheme.

Teachers need to be supported by their principal and district and state policy in order that their practices can be congruent with their developmentally appropriate beliefs. Primary teachers in this study held beliefs reflecting the developmental-interactive perspective advocated by experts in early childhood education as appropriate for children 6-8 years of age: child-centered integrated curriculum designed to develop skills through active involvement with other children, adults, and materials in the environment. However, according to their self-reports, teachers are not implementing instructional activities designed for active, experiential learning entirely consistent with their espoused beliefs regarding the importance of these activities. Although rating fairly high overall in the developmental appropriateness of instructional activities utilized, teachers reported teacher-directed large-group instruction, systematic use of reinforcement, and use of workbooks which is more consistent with a behaviorist-learning theory perspective. Results of this study support the contention that the behaviorist-learning theory perspective which dominates upper grades, along with recent emphasis on "back to basics," demands for acceleration from parents, and improved standardized tests scores results in teachers adopting instructional

approaches that are incompatible with research-supported knowledge about how young children learn and develop. To counteract these influences, ways need to be found to support the efforts of the National Association for the Education of Young Children and the National Association of Early Childhood Specialists in State Departments of Education to promote appropriate curriculum content and assessment in the early grades and to set forth professional guidelines in teacher training and program development.

School and district level implications. Often, district policy determines curriculum development, textbook selection, grouping and tracking policies, personnel policies, and resource allocation, with the standardization of these practices across all schools. Teachers and principals then assume the role of implementing a set of procedures designed elsewhere.

If accountability to the district and state and reliance upon district curriculum guides contributes to the reported discrepancies between the educational philosophies of teachers and principals and actual classroom practice (Hatch & Freeman, 1988a, 1988b; Hoot et al., 1989), then principals and teachers need to be empowered through site-based management to implement a developmentally appropriate primary program in each

school. While being required to meet broad district goals and performance measures, schools should have the authority to determine their own instructional policies, to decide how best to group students for instruction, to organize instructional time, and to select and use textbooks and other instructional materials which are consistent with developmentally appropriate beliefs about how young children learn and prosper.

State level implications. Several researchers suggest that the lack of congruence between teacher beliefs and practice can be attributed in part to accountability mandates from states requiring measurement of student achievement (Bredekamp & Shepard, 1989; Duffy, 1981; Hatch & Freeman, 1988b; Hoot et al., 1989; Shepard & Smith, 1985). Throughout the primary grades, most schools assess achievement using standardized tests that often do not reflect current theory and research about how young children learn, according to the NAEYC position statement on standardized testing of young children 3 through 8 Years of age (NAEYC & NAECS/SDE, 1991). While current research on reading instruction stresses a whole language/literacy approach emphasizing comprehension and integrating oral language, writing, reading, and spelling in meaningful context, standardized tests of reading achievement measure isolated skill acquisition related to

phonics and word recognition. While current theory of mathematics instruction accentuates the child's construction of number concepts through hands-on experiences, achievement tests measure knowledge of numerals. As a result, the use of standardized testing may have led to the adoption of inappropriate teaching practices so that children will perform sufficiently on standardized tests.

Therefore, it is recommended that the assessment of young children follow the NAEYC's position statements on guidelines for developmentally appropriate practice. Because reliable, valid instruments developed for use with young children are rare, group-administered, standardized, multiple-choice achievement tests should be restricted before third grade. Programs which are mandated to use a standardized test of children's progress for program evaluation or accountability purposes should employ a sampling method to eliminate the need to subject all first and second grade students to a testing procedure. Testing of young children must recognize individual diversity (gender, culture, socio-economic status). Standardized tests should be avoided in multicultural/multilingual communities if they are not sensitive to cultural diversity or bilingualism.

To evaluate the effect of a program on children's development and learning, multiple sources of assessment information should be used, including nonstandardized assessments such as systematic observation, checklists, anecdotal records, and samples of children's work. Using such an assessment system also allows accountability to focus primarily on how well schools produce desired results framed in terms of individual school goals, which is compatible with site-based management approaches.

Suggestions for Future Research

While there is considerable research on beliefs about developmentally appropriate practice at the preschool and kindergarten level, relatively little research centers on developmentally appropriate practice in the primary grades. A wealth of information could be tapped by further researching the beliefs and practices of primary teachers and elementary school principals.

In the present study, when there was a lack of congruence between teacher beliefs and practice, teachers' beliefs tended to be more developmentally appropriate than their classroom activities. An extensive qualitative investigation could give insight as to the reasons for such apparent incongruence. The

investigation might include in-depth interviews with primary teachers to elicit: (a) teachers' beliefs about how children learn and developmentally appropriate practice in the primary grades, (b) reasons why teachers implement particular instructional activities, (c) their explanations for any apparent lack of congruence between beliefs and practice, and (d) teachers' perceptions of what they need in order to practice what they believe. Participant observation including extensive observation and interaction with primary teachers in the context of the classroom could generate valuable information for follow-up interview questions. In addition, review of documents (lesson plans, worksheets, workbooks, report cards) and artifacts (classroom materials, sketches of classroom lay-out) could provide a source of information and questions.

In the present study, principals were found to have more developmentally appropriate beliefs about curriculum and instruction than primary teachers. How can principals use their position to promote developmentally appropriate primary programs? It would be useful to investigate schools with known developmentally appropriate curriculum and instruction practices in the primary grades and determine how principals at those schools are able to support implementation of appropriate

primary programs despite acknowledged pressure from parents, commercial curriculum developers, district and state mandates, and primary teachers themselves. In-depth interview questions could include the principals' responses to recommendations made in this study regarding the role of the principal: developmental theory and practice included in elementary principal certification programs, screening and hiring of primary teachers, principals striving to identify teacher beliefs, and primary teacher supervision and inservice training.

It would be informative to conduct a study similar to the present study which focuses on the beliefs of parents and policymakers (legislators, school board members, state board of education members) regarding developmentally appropriate practice for the primary grades. It is important that those persons make decisions regarding primary education based upon the most current knowledge of teaching and learning as derived from theory, research, and practice.

The present study examined levels of developmentally appropriate beliefs and practices as a function of early childhood or elementary certification level. Other variables of interest which could be examined in future studies include years of teaching experience (primary teachers), years of experience as part of a teacher

education faculty, and demographic differences in school populations (culture, socio-economic status, educational aspirations of parents).

On a broader scale, it would be worthwhile to compare the developmental appropriateness of the primary programs between schools following a district-specified curriculum and schools designing their own curriculum through site-based management.

Investigation of these research ideas would enhance our understanding of the factors which influence teachers' behavior in the classroom and contribute to the knowledge base that will allow educators to optimally provide for the needs of primary grade children.

APPENDIX A

Teacher Beliefs Scale

Please respond to the following items by circling the number that most nearly represents YOUR PERSONAL BELIEFS about the importance of that item in the primary grades.

1	2	3	4	5
Not important at all	Not very important	Fairly important	Very important	Extremely important

1. As an evaluation technique in the primary grades, standardized group tests are _____.
1 2 3 4 5
2. It is _____ for primary grade activities to be responsive to individual differences in interest.
1 2 3 4 5
3. It is _____ that each curriculum area be taught as separate subjects at separate times.
1 2 3 4 5
4. It is _____ for teacher-pupil interactions in classrooms to help develop children's self-esteem and positive feelings toward learning.
1 2 3 4 5
5. It is _____ for children to be allowed to select many of their own activities from a variety of learning areas that the teacher has prepared (manipulatives, writing, science center)
1 2 3 4 5
6. It is _____ for children to explore and experiment with various art media and forms of music/movement.
1 2 3 4 5
7. As an evaluation technique in the primary grades, teacher observation is _____.
1 2 3 4 5
8. It is _____ for students to work silently and alone on seatwork.
1 2 3 4 5

1	2	3	4	5
Not important at all	Not very important	Fairly important	Very important	Extremely important

9. It is _____ for primary grade activities to be responsive to individual differences in development.
1 2 3 4 5
10. Workbooks and/or ditto sheets are _____ to the primary grades.
1 2 3 4 5
11. It is _____ for children to learn through active exploration with concrete materials.
1 2 3 4 5
12. It is _____ for students to learn through interaction with other children.
1 2 3 4 5
13. Flashcards (numbers, letters, and/or words) are _____ to the primary grades for instructional purposes.
1 2 3 4 5
14. The basal reader is _____ to the reading program.
1 2 3 4 5
15. In teaching health and safety, it is _____ to include a variety of activities throughout the school year.
1 2 3 4 5
16. As an evaluation technique in the primary grades, performance on worksheets and workbooks is _____.
1 2 3 4 5
17. It is _____ for teachers to use their authority through treats, stickers, and/or stars to encourage appropriate behavior.
1 2 3 4 5
18. It is _____ for children to be instructed in recognizing the single letters of the alphabet and phonics, isolated from words.
1 2 3 4 5

1	2	3	4	5
Not important at all	Not very important	Fairly important	Very important	Extremely important

19. It is _____ for children to be involved in establishing rules for the classroom.
1 2 3 4 5
20. It is _____ for children to color within predefined lines.
1 2 3 4 5
21. In terms of effectiveness, it is _____ for the teacher to move among groups and individuals, offering suggestions, asking questions, and facilitating children's involvement with materials and activities.
1 2 3 4 5
22. It is _____ for teachers to use their authority through punishments and/or reprimands to encourage appropriate behavior.
1 2 3 4 5
23. It is _____ for children to experiment with writing by inventing their own spelling.
1 2 3 4 5
24. It is _____ for children to have stories read to them individually and/or on a group basis.
1 2 3 4 5
25. It is _____ for children to dictate stories to the teacher.
1 2 3 4 5
26. It is _____ for children to see and use functional print (telephone books, lists, magazines, etc.) and environmental print (cereal boxes, potato chip bags, etc.) in the primary grades.
1 2 3 4 5
27. It is _____ for children to participate in dramatic play.
1 2 3 4 5

1	2	3	4	5
Not important at all	Not very important	Fairly important	Very important	Extremely important

28. It is _____ for children to form letters correctly on a printed line.

1 2 3 4 5

29. It is _____ for children to talk informally with adults.

1 2 3 4 5

30. It is _____ to provide many opportunities to develop social skills with peers in the classroom.

1 2 3 4 5

31. It is _____ for 6 year olds to learn to read.

1 2 3 4 5

32. In the primary grades, it is _____ that math be integrated with all other curriculum areas.

1 2 3 4 5

33. In terms of effectiveness, it is _____ for the teacher to talk to the whole group and make sure everyone participates in the same activity.

1 2 3 4 5

34. In the classroom setting, it is _____ for the child to be exposed to multicultural and nonsexist activities.

1 2 3 4 5

35. It is _____ that outdoor time have planned activities.

1 2 3 4 5

36. Input from parents is _____.

1 2 3 4 5

APPENDIX B

Instructional Activities Scale

Please respond to the following items by circling the number that most nearly represents how often your children participate in the following activities, on the average.

1	2	3	4	5
Almost Never (less than monthly)	Rarely (monthly)	Sometimes (weekly)	Regularly (2-4/week)	Very Often (daily)

1. dictate stories to teacher
1 2 3 4 5
2. children selecting centers (art, book, math, science, writing, etc.)
1 2 3 4 5
3. participating in dramatic play
1 2 3 4 5
4. children reading in ability level groups
1 2 3 4 5
5. listening to stories read by teacher
1 2 3 4 5
6. doing creative writing (combining symbols/
invented spelling and drawing)
1 2 3 4 5
7. using flashcards with sight words and/or math facts
1 2 3 4 5
8. playing with games and puzzles
1 2 3 4 5
9. exploring animals, plants, scientific equipment
(scales, thermometers, gears)
1 2 3 4 5
10. singing and/or listening to music
1 2 3 4 5

1	2	3	4	5
Almost Never (less than monthly)	Rarely (monthly)	Sometimes (weekly)	Regularly (2-4/week)	Very Often (daily)

11. circling, underlining, and/or marking items on worksheets

1 2 3 4 5

12. creative movement

1 2 3 4 5

13. cutting their own shapes from paper

1 2 3 4 5

14. playing with manipulatives such as pegboards, puzzles, and/or legos

1 2 3 4 5

15. social reinforcement (verbal praise, approval, attention, etc.) for appropriate behavior and/or performance

1 2 3 4 5

16. coloring and/or cutting predrawn forms

1 2 3 4 5

17. math manipulatives and math games

1 2 3 4 5

18. practicing handwriting on lines

1 2 3 4 5

19. conversing privately with teacher

1 2 3 4 5

20. copying from the chalkboard

1 2 3 4 5

21. sitting for longer than 5 minutes between activities

1 2 3 4 5

22. large group teacher directed instruction

1 2 3 4 5

23. children working together on activities

1 2 3 4 5

1	2	3	4	5
Almost Never (less than monthly)	Rarely (monthly)	Sometimes (weekly)	Regularly (2-4/week)	Very Often (daily)

24. tangible rewards for appropriate behavior and/or performance

1 2 3 4 5

25. losing special privileges (trips, recess, free time, parties, etc.) for misbehavior

1 2 3 4 5

26. games/activities directed by or made by parents

1 2 3 4 5

27. multicultural and nonsexist activities

1 2 3 4 5

28. specifically planned outdoor activities

1 2 3 4 5

29. competitive math activities to learn math facts

1 2 3 4 5

30. health and safety activities

1 2 3 4 5

31. drawing, painting, working with playdough, and other art media

1 2 3 4 5

32. math incorporated with other subject areas

1 2 3 4 5

33. using isolation (standing in the corner or outside of the room) to obtain child compliance

1 2 3 4 5

APPENDIX C

Teacher Background Information Form

Research study identification number _____

Name _____

School _____

Highest degree earned _____

College or university _____

Please check which of the following best describes your
teacher
certification:

____ Teacher certification with endorsement in early
childhood

____ Teacher certification with endorsement in early
childhood special education

____ Teacher certification with endorsement in early
childhood and elementary endorsement

____ Teacher certification with elementary endorsement
only

____ Other: Please describe:

Please indicate the number of years you have taught at
any of the following levels:

First or second grade _____

Third, fourth, or fifth grade _____

Secondary _____

Please return this background information form and the
two questionnaires in the enclosed envelope within two
weeks.

Thank you for your cooperation.

Suzanne Adams, M.A.
W. Michael Martin, Ed.D.
School of Education
University of Colorado at Denver

Principal Background Information Form

Research study identification number _____

Name _____

School _____

Highest degree earned _____

College or university _____

Please check any of the following which describes your current and any previous certification:

____ Teacher certification with endorsement in early childhood

____ Teacher certification with endorsement in early childhood special education

____ Teacher certification with endorsement in early childhood and elementary endorsement

____ Teacher certification with elementary endorsement only

____ Type D Administrator certification

____ Other: Please describe:

Please return this background information form and the Principal Beliefs Scale questionnaire in the enclosed envelope within two weeks.

Thank you for your cooperation.

Suzanne Adams, M.A.
W. Michael Martin, Ed.D.
School of Education
University of Colorado at Denver

Teacher Educator Background Information Form

Research study identification number _____
Name _____
College or University at which you are a faculty
member _____

Highest degree earned _____
College or university _____

Please check which of the following best describes the
teacher
certification program in which you are involved:

- ____ Teacher certification with endorsement in early
childhood
- ____ Teacher certification with endorsement in early
childhood special education
- ____ Teacher certification with endorsement in early
childhood and elementary endorsement
- ____ Teacher certification with elementary endorsement
only
- ____ Other: Please describe:

Please return this background information form and the
Teacher Educator Beliefs Scale questionnaire in the
enclosed envelope within two weeks.

Thank you for your cooperation.

Suzanne Adams, M.A.
W. Michael Martin, Ed.D.
School of Education
University of Colorado at Denver

APPENDIX D

Checklist for Rating Developmentally Appropriate Practice in Early Childhood Classrooms

Based on S. Bredekamp (Ed.) (1987) Developmentally appropriate practice in early childhood programs serving children from birth through age 8 (exp. ed.). Washington, D.C.: National Association for the Education of Young Children. Sections on Preschool and Primary Grades, ages 3-8.

School_____Principal_____
Teacher_____Ages of children_____
Number of children in room_____Number of adults_____
Observed/rated by_____

Date(s)	Time(s)	Activities
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Five points are listed for rating each item. Under 5 the most appropriate practice indicators are listed, under point 1 the most inappropriate practice indicators are listed. Point 5 indicates close to 100% appropriate, point 4 indicates more appropriate than inappropriate. Point 3 indicates a fairly even split between appropriate and inappropriate. Point 2 indicates more inappropriate than appropriate. Point 1 indicates close to 100% inappropriate.

Below each item there is a space for a brief description of what you observed or found out by questioning the teacher that underlies your rating.

Developed by Rosalind Charlesworth, Jean Mosley, Kiane Burts, Craig Hart, Lisa Kirk, and Sue Hernandez, Louisiana State University, Baton Rouge.

Adapted for use with first and second grades by Suzanne Adams, University of Colorado at Denver.

CURRICULUM GOALS

1. Range of Curriculum Areas for Which Program is Designed

5. 4. 3. 2. 1

.physical	.narrow focus
.social	.intellectual emphasis
.emotional	.discrete academic skills
.intellectual	emphasis
.learning how to learn	

Description:

2. The Place of Children's Self-esteem, Sense of Competence, and Positive Feelings Toward Learning in the Curriculum and Instruction.

5. 4. 3. 2. 1

.Each child is given an equal amount of positive attention	.Children who conform or disrupt receive more attention
.Teacher speaks with individual children often	.Children are given attention according to their level of academic performance
.Teacher listens to children with attention and respect	
.Teacher responds to children's questions and requests	

Description:

3. View of Growth and Development.

5. 4. 3. 2. 1

.Work is individualized	.Evaluated against a group norm
.Children move at their own pace	.Everyone is expected to achieve the same narrowly defined skills
.Teacher accepts and provides for different levels of ability, development, and learning styles	.Everyone does the same thing at the same time

Description:

TEACHING STRATEGIES

4. The Emphases in the Curriculum

5.3.2. 1

.Learning occurs through projects and learning centers
 .Children's ideas are extended, questions are encouraged, and interests are developed
 .All subjects are integrated into units

.Curriculum is divided into discrete subject and time units
 .Emphasis on reading first and math second
 .Social studies, science, and health are included only if time permits
 .Art, music, and physical education are taught once per week by specialists.

Description:

5. Organization of the Curriculum

5.4.3.2. 1

.Activities center on topics such as in science or social studies
 .Topic activities include story writing and story telling, art, discussion, hearing stories and books, role-playing, reading, and cooperative activities
 .Skills are taught as they are needed to complete a task

.Teacher directed reading groups
 .Uses lecturing to the whole group at all times
 .Paper and pencil exercises, workbooks and worksheets predominate
 .Projects, learning centers and play are offered if time permits or as a reward for completing work

Description:

6. Teacher Preparation and Organization for Instruction

5. 2. 1

- | | |
|---|---|
| .Learning centers are set up which provide opportunities for writing, reading, math language games, and dramatic play | .Little time for enrichment activities |
| .Space is arranged to accomodate children individually, in small groups, and in large group | .May be interest centers available for children who finish their seatwork early. |
| | .May be centers where children complete a prescribed sequence of activities within a controlled time period |

Description:

7. Instructional Activities.

5. 4. 2. 1

- | | |
|---|--|
| .Children work and play cooperatively in groups well as alone | .At all times, children work silently on their worksheets or workbooks |
| .Projects are self selected with teacher guidance | .Little, if any, peer help is permitted |
| .Activity centers are changed frequently | .Penalties for talking |
| .One or more field trips | |
| .Resource people visit | |
| .Peer tutoring | |
| .Peer conversation | |

Description:

8. Learning Materials and Activities

5. 4. 3. 2. 1

- | | |
|--|---|
| .Concrete, real, and relevant children's lives | .Limited primarily to books, workbooks, pencils |
| .Blocks, cards, games, arts and crafts materials, woodworking, tools, books, pencils., science equipment | .Permanent desks that are rarely moved |
| .Flexible work spaces (tables, may be rearranged as needed | .Mostly large group instruction |
| | .Playful activity only when work is done |

Description:

INTEGRATED CURRICULUM

(Note: If you reach the end of your observations and any areas cannot be rated due to lack of information, arrange to meet with the teacher and ask the open-ended clarification questions. Use the descriptors as probes if necessary.)

9. Language and Literacy.

5. 4. 3. 2. 1

- | | |
|---|--|
| .Technical skills are taught as needed | .Teaching is geared to passing standardized tests |
| .Generous amounts of time are provided to learn through: literature and nonfiction reading; drawing; dictating and writing stories; bookmaking and library visits | .Reading taught through skills and subskills as a discrete subject |
| .Daily reading aloud by teacher | .Silence is required |
| .Subskills such as letters and phonics are taught individually and in small groups | .Language, writing, and spelling instruction focus on workbooks |
| .Literacy is taught through content areas such as science and social studies | .Teaching focuses on reading groups with other children having seatwork to keep busy |
| .Children's invented spellings are accepted | .Phonics instruction stresses learning rules not relationships |
| | .Everyone must complete same basals no matter what their abilities |
| | .Everyone knows who is in the slowest reading group |
| | .Acceptable writing has correct spelling and standard English |

Description: (Clarification:Describe your language and literacy program.)

10. Math

5. 4. 2. 1

- | | |
|--|---|
| .Children encouraged to use math through exploration, discovery, and solving meaningful problems | .Taught as separate separate |
| .Integrated with other areas | .Taught at a scheduled time each day |
| .Skills acquired through play, projects | .Focus exclusively on textbook, book, practice sheets, and drill |
| .Math manipulatives are used | .Seldom any "hands on" activity |
| .Math games are used | .Must finish work in order to use games and manipulatives or no math manipulatives at all |

Description: (Clarification: Describe your math program.)

11. Social Studies

5. 4. 3. 2. 1

- | | |
|--|---|
| .Themes may extend over a period of time | .Included occasionally if reading and math done |
| .Learned through playful activities, discussion, trips, visitors, writing, reading, social skills development, (planning, sharing) | .Mostly related to holidays |
| .Art, music, dance, drama, woodworking, and games are incorporated | .Brief activities from the social studies textbook or commercially developed newspaper (Weekly Reader) and doing dittoed seatwork |

Description:
(Clarification: Describe your social studies program.)

12. Science.

5. 4. 3. 2. 1

- | | |
|---|--|
| .Discovery, build on the children's natural interest | .Taught from a single textbook or not at all |
| .Projects are experimental and exploratory, encourage active involvement of every child | .Complete worksheets |
| .Plants, pets, and other science items (magnets, magnifying glasses, books about Earth, etc.) in the classroom | .Watch teacher demonstrations |
| .Through projects and field trips children learn to plan, apply thinking skills, hypothesize, observe, experiment, verify | .No field trips |
| .Learn science facts related to their own experience | .Materials in science center rarely changed |

Description: (Clarification: Describe your science program.)

13. Health and Safety

5. 4. 3. 2. 1

- | | |
|--|---|
| .Projects designed to help children use personalized facts | .Posters and textbooks used primarily |
| .Children learn to integrate facts into their daily habits | .Once a week lesson or once a year unit on health |
| .Dictate or write their own plans | |
| .Draw and write about these activities | |
| .Read about these activities | |
| .Enjoy learning because it is related to their lives | |

Description: (Clarification: Describe your health and safety curriculum.)

14. Art, Music, Movement, Woodworking, Drama, and Dance.

5. 4. 2. 1

- | | |
|--|--|
| .Integrated throughout the day; planned and spontaneous | .Taught as separate subjects once a week |
| .Specialists work with teachers and children | .Specialists do not coordinate closely with classroom teachers |
| .Children explore a variety of art media and music | .Representational art only |
| .Children design and direct their own products and productions occasionally | .Crafts substitute for artistic expression |
| .Teacher encourages dancing creative dramatics, record playing, singing, instruments | .Coloring book type activities |
| | .Use patterns and cut-outs |

Description:

(Tell me about your program in the arts, such as art, music, movement, woodworking, drama, and dance.)

15. Multicultural Education

5. 4. 3 2. 1

- | | |
|--|--|
| .Multicultural focus integrated into all units or themes | .Materials and activities lack attention to cultural diversity and nonsexist point of view |
| .Materials and activities are multicultural and nonsexist | .Ignore multicultural view |
| .Teacher provides both sexes with equal opportunities to take part in all activities | .Supports sexist ideas |
| .Cooks and serves food from various cultures | |
| .Celebrates holidays of various cultures | |

Description:

(Tell me how you provide for multicultural education in your classroom).

16. Outdoor Activity

5. 4. 3. 2. 1

- | | |
|---|---|
| <ul style="list-style-type: none"> .Planned daily so children can develop large muscle skills, learn about outdoor environments, and express themselves freely on a well designed playground | <ul style="list-style-type: none"> .Limited because it interferes with instructional time .Provided as a time for recess to use up excess energy .Not supervised so children don't participate |
|---|---|

Description:

(Clarification: Describe the focus of your outdoor activity program.)

GUIDANCE OF SOCIAL EMOTIONAL DEVELOPMENT

17. Prosocial Behavior, Perseverance, and Industry

5. 4. 3. 2. 1

- | | |
|---|--|
| <ul style="list-style-type: none"> .Stimulating, motivating activities are provided that promote student involvement .Individual choices are encouraged when appropriate .Enough time is allowed to complete work .Private time with friend or teacher provided | <ul style="list-style-type: none"> .Lectures about the importance of appropriate social behavior .Punishes children who become bored or restless with seatwork and whisper, talk, or wander around .Punishes children who dawdle and do not finish work in allotted time .No time for private conversations .Only the most able students finish their work in time for special interests or interaction with other students |
|---|--|

Description:

18. Helping, Cooperating, Negotiating, and Solving Social Problems

5. 4. 3. 2. 1

- | | |
|---|---|
| .Daily opportunities to develop social skills such as helping others, cooperating, negotiating, and talking with others to solve problems | .Little time to develop social skills mostly independent seatwork and teacher directed activities |
| .Teacher helps children deal with anger, sadness, and frustration | .Social opportunity is on the playground but no consistent adult is available to provide guidance |
| .Children are encouraged to talk about feelings | .Teacher tells child what <u>not</u> to do in social interactions |
| .Teacher helps child pinpoint problem, find alternatives, explore solutions | .Teacher provides solutions to problems |
| .Teacher assists children in solving their own problems; teaches problem-solving skills | |

Description:

19. Guidance Techniques.

5. 4. 3. 2. 1

- | | |
|---|--|
| .Positive guidance techniques are used: | .Teacher is in adversarial role |
| -Clear limits are set in a positive manner and explained to children | .Emphasis on power to provide rewards and punishments |
| -Children are involved in establishing rules | .Maintaining control of classroom is primary goal |
| -Children involved in problem solving misbehavior | .Teachers: |
| -Redirection is used | -enforce rules |
| -Meets with child who has problems (and with parents-works towards home-school cooperation) | -give external rewards for good behavior |
| .Recognizes that every infraction doesn't warrant attention and identifies those that can be used as learning opportunities | -punish infractions |
| | .When there is social conflict, participants are separated and quieted |
| | -social issue is avoided |
| | .Teacher attitude is demeaning to child |
| | .Teacher reprimands child from across the room |

- .Teacher does not use physical punishment or other negative discipline methods that hurt, frighten, or humiliate children.
- .Teacher speaks privately to child
- ."Catch them doing it right" reinforcement provided when expectations are met

Description:

20. Facilitation of Self- esteem by Expressing Respect, Acceptance, and Comfort for Children Regardless of Their Behavior.

5. 4. 3. 2. 1

- | | |
|--|--|
| .Children are trusted to make some of their own decisions | .Teacher screams in anger |
| .Children are encouraged to develop their own self control | .Teacher neglects children's individual needs |
| .Teacher is warm, accepting | .Physical or emotional pain is inflicted |
| .Teacher provides nurturance and understanding | .Criticizes, ridicules, blames, teases, insults, name-calls, threatens, frightens, and/or humiliates |
| .Teacher adapts to child's needs | .Laughs at children in derogatory manner |
| .Teacher treats children of all sexes, races, religions, cultures, and capabilities equally with respect and consideration | .Allows students to laugh at each other in a derogatory way |

Description:

21. Internal vs External Sources of Motivation and Rewards for Achievement

5. 4. 3. 2. 1

- | | |
|--|--|
| .Encourages development of internal rewards and internal critique | .Uses primarily external rewards and punishment |
| .Guides children to see alternatives, improvements, and solutions | .Corrects errors; makes sure children know right answers |
| .Guides children to find and correct own errors | .Rewards children with stickers, praise in front of group, holds child up as examples |
| .Teacher points out how good it feels to complete a task, to try to be successful, to live up to one's own standards for achievement | .Motivation is through
-percentage or letter grades
-stickers
-stars on charts
-candy
-privileges |
| .The reward for completing a task is the opportunity to move on to a more difficult challenge | |

Description:

22. Teacher As a Model for Motivation

5. 4. 3. 2. 1

- | | |
|--|---|
| .Through relationship with teacher, child models teacher's enthusiasm for learning, identifies with teacher's conscientious attitude toward work, and gains in self motivation | .Children identify with teacher's lack of enthusiasm and interest in his or her work and emulate it |
|--|---|

Description:

TRANSITIONS

23. Transitions Within the School.

5. 4. 3. 2. 1

.Children are assisted in making
smooth transitions between
groups or programs throughout
the day by teachers who:

- maintain continuity and
predictability
- maintain ongoing communication
- prepare children for each
transition
- involve parents
- minimize the number of
transitions necessary

.Day is fragmented
among many different
groups and programs
with little attempt
to communicate or
coordinate successful
transitions

Description:

24. Transitions Within the Classroom

5. 4. 3. 2. 1

.Transition activities (i.e.
special song)

.Warning signals are given

.Ample time is given

.Next activity is intrinsically
enticing

.New activity is prepared
before the transition to avoid
waiting

.Children are not always required
to move as a group from one
activity to another

.There is a daily schedule which
is followed, as possible

.Single announcement

.Abrupt changes

.Wait for all to arrive
before begin next
activity

.Individuals singled
out for being slow or
distracted

Description:

PARENT-TEACHER RELATIONS: INTERVIEW

Note: Ask the teacher the open-ended questions. Use the descriptors as probes if necessary.

25. Teacher's View of Parents.

5. 4. 3. 2. 1

- | | |
|-------------------------------------|------------------------|
| . Parents are partners | . Teachers not given |
| . Periodic conferences are held | adequate time to |
| . Parents are welcome at school | work with parents |
| . Home visits by teachers are | . Subtle messages make |
| encouraged | parents feel |
| . Teacher listens to parents | unwelcome at school |
| and respects their goals for the | . Parent's role is to |
| child, their culture and | carry out the |
| their family configuration | school's agenda |
| . Teacher understands that children | |
| whose parents are involved, at | |
| school or at home, have greater | |
| school success | |

Description:

(Tell me how you view the role of parents as they relate to your classroom and your program.)

26. Parent Involvement in the Classroom

5. 4. 3. 2. 1

- | | |
|---------------------------------|----------------------------|
| . Family members are encouraged | . Schedule is too tight to |
| to help in the classroom | include parents |
| . Family members are encouraged | . Parent participation |
| to help outside the classroom | policy is not followed |
| -make instructional materials | . Teachers' only contact |
| -help with school-related | with parents is |
| learning at home | attending formal PTA |
| . Family members are asked to | meetings |
| help with decision-making | . Contacts are formal |
| where appropriate | through report cards and |
| | conferences once or |
| | twice during the year |

Description:

(Tell me about parent involvement in your program.)

27. Evaluation Methods.

5. 4. 3. 2. 1

- | | |
|---|--|
| .Assessment through observation and recording at regular intervals | .Regular testing on each subject |
| .Written records kept documenting development | .Graded tests and/or worksheets sent home or filed after they are seen by children |
| .Results are used to improve and individualize instruction | .Teach to test to ease children's stress |
| .No letter or number grades are given; or where letter or number grades are required by the school or district, the teacher provides comments and descriptors in addition to letter/number grades | |
| .Variety of assessment tools and measurements utilized; portfolios | |

Description:

(Tell me about your evaluation system. How do you go about assessing the students and how do you use the information?)

APPENDIX E

Letter to Panel of Early Childhood Educators

Dear Early Childhood Educator:

You are being invited to participate in a study concerning education at the primary level. The purpose of our study is to describe the classroom practices of primary grade teachers and to identify the degree to which the beliefs of primary teachers, elementary school principals, and teacher educators are congruent with the National Association for the Education of Young Children (NAEYC) guidelines for appropriate curriculum and instructional practices for 6 to 8 year olds.

In one part of the study, data on teachers' practices will be collected by observing a subsample of twenty primary teachers using the Checklist for Rating Developmentally Appropriate Practice in Early Childhood Classrooms, a 24-item observational instrument with items constructed corresponding to the NAEYC guidelines for children ages 5 to 8 (Bredekamp, 1987). Areas include curriculum goals, teaching strategies, integrated curriculum, guidance of social-emotional development, motivation, and transitions. An attached interview includes three questions related to parent-teacher relations and evaluation and provides open-ended clarification questions for any of the observation items which cannot be rated due to lack of information.

Each item in the observation instrument is rated by observers on a 5-point Likert scale, the most appropriate practice descriptors are listed under point 5 and the most inappropriate under point 1.

Construct and content validity for this instrument derives from the widely accepted definition of developmentally appropriate practice as explained in the NAEYC guidelines (Bredekamp, 1987).

In order to provide further content validity for this measure, we have elected to ask educators with extensive background in early childhood education to verify that the items listed in each end of the continuum discriminate between appropriate and inappropriate practices as defined by the NAEYC document.

We are asking that you take a few moments to read this instrument and comment on the accuracy of the descriptors listed as representing appropriate and inappropriate practice. Please jot any comments directly on the form.

If you have any questions concerning this study, please call Suzanne Adams at either of the following telephone numbers:

Home: 733-0343

Work: 556-3205

Your participation would be greatly appreciated. Thank you very much for your time in assisting our research endeavor.

Sincerely,

Suzanne Adams, M.A.
W. Michael Martin, Ed.D.
School of Education

APPENDIX F

Letter to District Research Administrators

January 1992

Dear Administrator:

We would like permission to include your school district in our study concerning developmentally appropriate curriculum and instructional methods in the primary grades.

Schools in your district were selected from a random sample of public schools in Denver and the surrounding area. We will need a sufficient number of participating schools to result in a final sample pool of approximately 150-200 primary teachers.

The purpose of our study is to describe the beliefs of primary grade teachers, principals, and teacher educators and the classroom practices of primary grade teachers.

Data will be collected by using a questionnaire based on the definition of developmentally appropriate practices established by the National Association for the Education of Young Children. This questionnaire consists of a Teacher Beliefs Scale exploring beliefs about curriculum and practices in the primary grades and an Instructional Activities Scale wherein teachers indicate how often their students participate in certain activities. Completing both questionnaires should take teachers 15-20 minutes. Principals at the selected schools will also be asked to complete a version of the Beliefs Scale.

Postage paid return envelopes will be enclosed with each survey. Each survey will contain a cover sheet which explains that the confidentiality of the respondent is guaranteed.

Supplementary data on teachers' practices will be collected by observing a subsample of twenty primary teachers. Selected teachers will be observed twice for two-hour periods and interviewed regarding their thoughts

on parent-teacher relations and evaluation. Interview sessions will take less than one-half hour and will be scheduled at the convenience of the teacher.

We will be contacting you by telephone to answer any questions you might have about this study. Your participation would be greatly appreciated. Thank you very much for your consideration.

Sincerely,

Suzanne Adams, M.A.
W. Michael Martin, Ed.D.
School of Education

APPENDIX G

Letter to Principals

January 1992

Dear Principal:

You are being invited to participate in a study concerning education at the primary level. The purpose of our study is to describe the beliefs of primary grade teachers, principals, and teacher educators and the classroom practices of primary grade teachers.

In this study, principals will be asked to fill out a brief questionnaire concerning their beliefs about curriculum and practices in the primary grades. Completing the questionnaire should take less than 15 minutes.

In addition, participating principals will be asked to distribute two questionnaires to each first and second grade teacher in their school: a Teacher Beliefs Scale concerning beliefs about curriculum and practices in the primary grades and an Instructional Activities Scale wherein teachers indicate how often their students participate in certain activities. Completing both questionnaires should take teachers 15-20 minutes.

Postage paid envelopes will be enclosed with each survey. Teachers will return surveys directly to Suzanne Adams; you will not be responsible for collecting them. Each survey will contain a cover sheet which explains that the confidentiality of each respondent is guaranteed.

Approximately 150-200 teachers will be surveyed. In addition, a randomly selected group of 20 teachers will be asked permission to observe their classrooms. Trained undergraduate elementary education students will observe these classrooms for two 2-hour periods to record classroom activities. Observers will need to meet briefly with these teachers to ask questions regarding parent involvement and evaluation.

Each principal and teacher participating in this study will be sent a written summary of the research findings upon completion of the study.

If you have any questions concerning this study, please call Suzanne Adams at either of the following telephone numbers:

Home: 733-0343

Work: 556-3205

Regardless of your decision, please complete and return the enclosed postcard. Your participation would be greatly appreciated. Thank you very much for your consideration.

Sincerely,

Suzanne Adams, M.A.
W. Michael Martin, Ed.D.
School of Education

APPENDIX H

Return Postcard Enclosed to Principals

Principal name
School name
School address

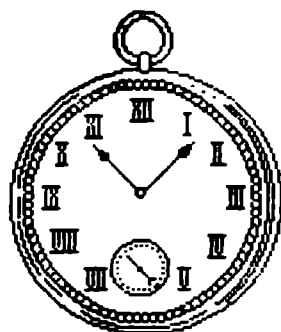
_____ I do not agree to participate

Suzanne Adams
1266 So. Vine St.
Denver, CO 80210

_____ I agree to participate in this
study concerning educators'
beliefs about appropriate primary
curriculum

If you have agreed to participate,
please list the names of all of
the first and second grade teachers
at your school.

APPENDIX I
Note to Teachers



Dear Teacher,

I'm asking for a few minutes of
your precious time.

I know how hectic a teacher's
life can be.

Please relax and have a cup of tea while you respond to
these questionnaires.

As a fellow teacher, I thank you.

Suzanne Adams

APPENDIX J

Informed Consent Letter

January 1992

Dear Educator:

You are being invited to participate in a study concerning education at the primary level. The purpose of this study is to describe the beliefs of primary grade teachers, principals, and teacher educators and the classroom practices of primary grade teachers.

This study has been approved by participating districts and principals. The research is being conducted through the University of Colorado at Denver. Over 200 first and second grade teachers, their principals, and faculty members in teacher education programs are being surveyed.

Each participant will be assigned a code number and will be assured complete anonymity. Upon return, the background information form with the identifying number code will be separated from the questionnaires, thus individual names will not be linked with questionnaire responses. Your right to confidentiality is guaranteed. Neither you nor your school will be identified with or associated with the information provided. Therefore, participating in this research poses no risk to you other than taking your time. Your participation is voluntary. Return of the background information form and the questionnaires constitutes your informed consent to participate in the study.

Each participant will be sent a written summary of the research findings upon completion of the study.

If you have any questions concerning your rights as a participant, please contact the Office of Research Administration, CU-Denver, Box 123, telephone 556-2770.

Your participation would be greatly appreciated. Thank you very much for your consideration.

Sincerely,

Suzanne Adams, M.A.
W.Michael Martin, Ed.D.

APPENDIX K

Teacher Observation Informed Consent Letter

Dear _____,

You are being invited to participate in a study concerning education at the primary level. The purpose of this study is to describe the beliefs of primary grade teachers, principals, and teacher educators and the classroom practices of primary grade teachers. This research is being conducted through the University of Colorado at Denver.

Twenty first and second grade teachers who participated in the survey portion of this study were randomly selected for classroom observation. We would like to observe your classroom twice for two-hour periods and ask you questions related to your classroom practice. Observers will be undergraduate students in early childhood and elementary education who have taken a course from Suzanne Adams at Metropolitan State College of Denver entitled Developmental Educational Psychology. They have received training in unobtrusive observation and will not interfere with classroom proceedings. Interview sessions will take less than one-half hour and will be scheduled at your convenience.

As before, you will be assigned a code and will be assured complete anonymity. Your right to confidentiality is guaranteed. Neither you nor your school will be identified with or associated in any way with the information provided. Therefore, participating in this research poses no risk to you other than taking your time. Your participation is voluntary, and you may withdraw at any time without prejudice.

Feedback will be provided to participants upon the completion of the study. Each teacher will be sent a written summary of the research findings.

The researchers will be available to address any concerns throughout the course of the study. If you have any questions concerning this study, please call Suzanne Adams at 733-0343 or 556-3205. If you have questions concerning your rights as a subject, you may direct these to the Office of Research Administration, CU-Denver Box 123, telephone 556-2770.

Regardless of your decision, please complete the attached form and return it in the enclosed envelope. Your participation in this portion of the study would be greatly appreciated. Thank you very much for your consideration.

Sincerely,

Suzanne Adams, M.A.
W. Michael Martin, Ed.D.
School of Education

Informed Consent

I _____ do or do not (please circle your response) agree to participate in this study concerning classroom practices of primary grade teachers. I understand that I will be observed and interviewed and that my identity will be protected. I also understand that my rights to confidentiality will be guaranteed and that I may withdraw at any time. I understand that if I agree to participate, the researchers will contact me to set up convenient observation and interview dates.

Signature

If you have agreed to participate, please list your school and home telephone numbers so that we can contact you for appointment times.

School _____

Home _____

Thank you,

Suzanne Adams
W. Michael Martin

APPENDIX L

Mean Scores Rating Importance of Belief Items by Primary Teachers(T), Principals (P), and Teacher Educators (TE)

Belief Item	Group		
	T	P	TE
1. As an evaluation technique in the primary grades, standardized group tests are_____	1.852	1.844	1.933
2. It is _____for primary grade activities to be responsive to individual differences in interest.	4.071	4.281	4.489
3. It is _____ that each curriculum area be taught as separate subjects at separate times.	1.690	1.375	1.422
4. It is _____for teacher-pupil interactions to help develop children's self-esteem and positive feelings toward learning.	4.915	4.906	4.756
5. It is _____ for children to be allowed to select many of their own activities from a variety of learning areas that the teacher prepared.	3.782	4.094	3.978
6. It is _____ for children to explore and experiment with various art media and forms of music/movement.	4.255	4.375	4.333
7. As an evaluation technique in the primary grades, teacher observation is _____.	4.676	4.625	4.733
8. It is _____ for students to work silently and alone on seatwork.	2.486	2.094	2.133
9. It is _____for primary grade activities to be responsive to individual differences in development.	4.507	4.688	4.683
10. Workbooks and/or ditto sheets are _____ to the primary grades.	2.415	1.742	1.867
11. It is _____for children to learn through active exploration with concrete materials.	4.535	4.656	4.778

Belief Item	Group		
	T	P	TE
12. It is _____ for students to learn through interaction with other children.	4.511	4.781	4.578
13. Flashcards (numbers, letters, and/or words) are _____ to the primary grades for instructional purposes.	2.786	2.531	2.533
14. The basal reader is _____ to the reading program.	2.355	2.188	2.333
15. In teaching health and safety, it is _____ to include a variety of activities throughout the school year.	4.028	3.968	4.311
16. As an evaluation technique in the primary grades, performance on worksheets and workbooks is _____.	2.450	2.097	2.089
17. It is _____ for teachers to use authority through treats, stickers, and/or stars to encourage appropriate behavior.	2.679	2.387	1.977
18. It is _____ for children to be instructed in recognizing single letters of the alphabet and phonics, isolated from words.	2.814	2.452	2.667
19. It is _____ for children to be involved in establishing rules for the classroom.	4.390	4.188	4.136
20. It is _____ for children to color within predefined lines.	2.113	1.625	1.644
21. In terms of effectiveness, it is _____ for the teacher to move among groups and individuals, offering suggestions, asking questions and facilitating children's involvement with materials and activities.	4.652	4.774	4.822
22. It is _____ for teachers to use authority through punishments and/or reprimands to encourage appropriate behavior.	2.221	1.645	1.733
23. It is _____ for children to experiment with writing by inventing their own spelling.	4.414	4.419	4.111

Belief Item	Group		
	T	P	TE
24.It is ____ for children to have stories read to them individually and/or on a group basis.	4.901	4.871	4.867
25.It is _____for children to dictate stories to the teacher.	3.857	4.161	4.156
26.It is _____for children to see and use functional print (telephone books, lists, magazines, etc.) and environmental print (cereal boxes, cookie bags, etc.) in the primary grades.	4.401	4.313	4.467
27.It is _____for children to participate in dramatic play.	4.106	4.375	4.311
28.It is _____ for children to form letters correctly on a printed line.	3.149*	2.750	2.578
29.It is _____for children to talk informally with adults.	4.394	4.469	4.644
30.It is ____ to provide many opportunities to develop social skills with peers in the classroom.	4.592	4.750	4.711
31.It is ____ for 6 year olds to learn to read.	3.204*	3.063*	2.841
32.In primary grades, it is ____ that math be integrated with other curriculum areas.	3.655	3.875	3.978
33.In terms of effectiveness, it is ____ for the teacher to talk to the whole group and make sure everyone participates in the same activity.	2.688	2.581	2.000
34.In the classroom setting, it is ____ for the child to be exposed to multicultural and nonsexist activities.	4.444	4.594	4.556
35.It is _____ that outdoor time have planned activities.	2.246*	2.688*	2.489*
36.Input from parents is _____.	4.599	4.750	4.644

Note. * Indicates ratings which do not meet NAEYC guidelines for developmentally appropriate practice.

APPENDIX M

Mean Scores Rating the Frequency of Each Activity

Instructional Activity	Combined Means Score of 142 Primary Teachers
1. dictate stories to teacher	2.730*
2. children selecting centers (art, book, math, science, writing, etc.)	3.929
3. participating in dramatic play	2.624*
4. children reading in ability level groups	2.937
5. listening to stories read by teacher	4.923
6. doing creative writing (combining symbols/ invented spelling and drawing)	4.676
7. using flashcards with sight words and/or math facts	2.451
8. playing with games and puzzles	3.739
9. exploring animals, plants, scientific equipment (scales, thermometers, gears)	3.380
10. singing and/or listening to music	4.049
11. circling, underlining, and/or marking items on worksheets	2.823
12. creative movement	3.159
13. cutting their own shapes from paper	3.493
14. playing with manipulatives such as pegboards, puzzles, and/or legos	3.972
15. social reinforcement (verbal praise, approval, attention, etc.) for appropriate behavior and/or performance	4.930
16. coloring and/or cutting predrawn forms	2.468

Instructional Activity	Combined Means Score of 142 Primary Teachers
17.math manipulatives and math games	4.254
18.practicing handwriting on lines	3.411*
19.conversing privately with teacher	4.155
20.copying from the chalkboard	2.838
21.sitting for longer than 5 minutes between activities	2.935
22.large group teacher directed instruction	4.162*
23.children working together on activities	4.440
24.tangible rewards for appropriate behavior and/or performance	3.507*
25.losing special privileges (trips, recess, free time, parties, etc.) for misbehavior	2.641
26.games/activities directed by or made by parents	2.162*
27.multicultural and nonsexist activities	3.647
28.specifically planned outdoor activities	2.341*
29.competitive math activities to learn facts	2.279
30.health and safety activities	2.986*
31.drawing, painting, working with playdough, and other art media	3.676
32.math incorporated with other subject areas	3.704
33.using isolation (standing in the corner or outside of the room) to obtain compliance	1.721

Note. * Indicates ratings which do not meet NAEYC guidelines for developmentally appropriate practice.

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